Bull Trout Final Critical Habitat Justification: Rationale for Why Habitat is Essential, and Documentation of Occupancy

Chapter 2. Coastal Recovery Unit—Puget Sound Critical Habitat Unit

Chapter 2. Puget Sound Critical Habitat Unit

The Puget Sound CHU is essential for maintaining bull trout distribution within this unique geographic region of the RU. Puget Sound is a fjord-like estuary that covers an area of approximately 2,330 square kilometers (km^2) (900 square miles (mi^2)), including 3,700 kilometers (km) (2,300 miles(mi)) of nearshore marine coastline. It was designated as an "Estuary of National Significance" by the U.S. Environmental Protection Agency in 1988.

This CHU is essential for maintaining distribution of the amphidromous life history form within the Coastal RU, which is rare across this species geographic range. It is not only essential for maintaining this life history form within this RU but within its coterminous range. It is one of only two CHUs that contain the amphidromous life history form. See Appendix 1 for more detailed information.

The Puget Sound CHU includes approximately 2,737.3 km (1,700.8 mi) of streams; 17,890.5 ha (44,208.3 ac) of lake surface area; and 911.9 km (566.6 mi) of marine shoreline designated as critical habitat. The CHU is bordered by the Cascade Range to the east, Puget Sound to the west, Lower Columbia River Basins and Olympic Peninsula CHUs to the south, and the U.S.–Canada border to the north. The CHU extends across Whatcom, Skagit, Snohomish, King, Pierce, Thurston, and Island Counties. The major river basins initiate from the Cascade Range and flow west, discharging into Puget Sound, with the exception of the Chilliwack River system, which flows northwest into British Columbia, discharging into the Fraser River. The Puget Sound CHU is divided into 13 CHSUs.

2.1. Chilliwack River Critical Habitat Subunit

The Chilliwack River CHSU is essential to bull trout conservation because it represents unique geographic distribution within the RU, and supports multiple migratory life history forms. Chilliwack Lake and significant portions of its headwaters are in protected areas (North Cascades National Park, Chilliwack Ecological Reserve, and Chilliwack Lake Provincial Park) (see Appendix 1 for more detailed information).

The Chilliwack River system is a transboundary watershed flowing northwest into British Columbia, Canada, where it discharges into the Fraser River. The Chilliwack River CHSU includes only those portions of this transboundary system that are within the United States. The Bull Trout Draft Recovery Plan (Service 2004a, vol. 1, p. 27) describes the Chilliwack River core area as including portions of the Sumas River and Chilliwack River and its tributaries contained within the United States. A total of approximately 50 km (31 mi) of stream is designated as critical habitat. The following water bodies are included in this CHSU (see Table 11):

(A) The Chilliwack River from the U.S.–Canada border upstream approximately 18.8 km (11.7 mi) to the limit of accessible headwater habitat at its confluence with Copper Creek and the following tributaries from their mouths upstream to natural barriers provide spawning and rearing habitat for the local population: Bear Creek upstream 0.5 km (0.3 mi); Indian Creek upstream 1.6 km (1.0 mi); Brush Creek upstream 0.5 km (0.3 mi); and Easy Creek upstream 0.8 km (0.5 mi).

Little Chilliwack River from its confluence with the Chilliwack River upstream approximately 6.4 km (4.0 mi) to its headwaters and its tributary Little Fork from its mouth upstream

approximately 3.2 km (2.0 mi) to its headwaters provide spawning and rearing habitat for migratory bull trout and the local population. These streams are within North Cascades National Park, so habitat remains essentially in pristine condition.

(B) Depot Creek from the U.S.–Canada border upstream 2.7 km (1.7 mi) to the limit of accessible headwater habitat provides spawning and rearing habitat for migratory bull trout in the local population.

(C) Silesia Creek from the U.S.–Canada border upstream approximately 15.3 km (9.5 mi) to the limit of accessible headwater habitat provides spawning and rearing habitat for migratory bull trout in the local population.

Table 11. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Chilliwack River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Chilliwack River	Depot Creek	WA	Bull trout SR has been recorded within the British Columbia reaches with accessible habitat recorded to the border (Nelson and Caverhill 1999; M.A. Whelen and Associates Ltd. and TSSHRC 1996). Although no surveys have been conducted in the U.S. reaches, habitat is accessible to migratory bull trout.	Depot Creek provides essential habitat used for spawning and rearing in the Depot Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1213329 490000
Puget Sound—Chilliwack River	Bear Creek	WA	Juvenile bull trout observed in Chilliwack River near the creek mouth in the mid-70s during the last survey of this stream (Glesne, in litt. 1993). Bear Creek is within the North Cascades National Park, so habitat remains essentially in pristine condition.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1213871 489654
Puget Sound—Chilliwack River	Indian Creek	WA	Bull trout observed in 1998 (Doyle et al. in litt. 2000). Juvenile bull trout observed in the mid-70s during last survey of this stream (Glesne, in litt. 1993). Indian Creek is within the North Cascades National Park, so habitat remains essentially in pristine condition.	Indian Creek provides essential habitat used for spawning and rearing in the Chilliwack River local population. It is essential for maintaining distribution, abundance, and productivity.	1213972 489471
Puget Sound—Chilliwack River	Little Chilliwack River	WA	Juvenile bull trout observed in the mid-70s during last survey of this stream (Glesne, in litt. 1993). Stream is within the North Cascades National Park, so habitat remains essentially in pristine condition.	Little Chilliwack River provides essential habitat used for spawning and rearing in the Little Chilliwack River local population. It is essential for maintaining distribution, abundance, and productivity.	1214074 489925
Puget Sound—Chilliwack River	Chilliwack River	WA	National Park Service surveys detected bull trout in the mainstem river of this adfluvial population in 1998 and 1999, and observed spawning bull trout in 1998 (Doyle et al., in litt. 2000). A 1998 Chilliwack Lake angler survey also sampled large numbers of bull trout in Chilliwack Lake (Nelson and Caverhill. 1999), the primary foraging and overwintering habitat located in British Columbia just across the border.	Mainstem Chilliwack River provides habitat used for spawning and rearing. It may also provide riverine foraging habitat for subadult and adult bull trout. It is essential for maintaining distribution, abundance, productivity, and connectivity to FMO habitat (Chilliwack Lake) in BC.	1214101 490000
Puget Sound—Chilliwack River	Brush Creek	WA	Juvenile bull trout observed in the mid-70s during last survey of this stream (Glesne, in litt. 1993). Brush Creek is within the North Cascades National Park, so habitat remains essentially in pristine condition.	Brush Creek provides essential habitat used for spawning and rearing in the Chilliwack River local population. It is essential for maintaining distribution, abundance, and productivity.	1214226 489130
Puget Sound—Chilliwack River	Little Fork Little Chilliwack River	WA	Connected to a known occupied stream. Little Fork is within the North Cascades National Park, so habitat is essentially in pristine condition. No surveys have been conducted to specifically detect bull trout.	Little Fork provides essential habitat used for spawning and rearing in the Little Chilliwack River local population. It is essential for maintaining distribution, abundance, and productivity.	1214264 489798

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Chilliwack River	Easy Creek	WA	Juvenile bull trout observed in the mid-70s during the last survey of this stream (Glesne, in litt. 1993). Easy Creek is within the North Cascades National Park, so habitat remains essentially in pristine condition.	Easy Creek provides essential habitat used for spawning and rearing in the Chilliwack River local population. It is essential for maintaining distribution, abundance, and productivity.	1214574 488888
Puget Sound—Chilliwack River	Silesia Creek	WA	Bull trout SR has been recorded within the British Columbia reaches, with accessible habitat to the border (M.A. Whelen and Associates Ltd. and TSSHRC 1996). Although no surveys have been conducted in the U.S. reaches, habitat is accessible to migratory bull trout.	Silesia Creek provides essential habitat for spawning and rearing, and is an identified local population. It is essential for maintaining distribution, abundance, and productivity.	1216118 489988

2.2. Nooksack River Critical Habitat Subunit

The Nooksack River CHSU is essential to bull trout conservation because it represents the northern most distribution of amphidromous bull trout in Puget Sound. Bull trout's sympatric distribution with Dolly Varden suggests this CHSU may represent a key climate change refugium for the species due to Dolly Varden's presumed colder water requirements. Portions of the headwaters are within protected areas (Mount Baker Wilderness) (see Appendix 1 for more detailed information).

The Nooksack River CHSU is located on the western slopes of the Cascade Range. The Nooksack River system flows west from the Cascade Mountain Range towards Puget Sound, discharging into Bellingham Bay. A total of approximately 377 km (231 mi) of stream is designated as critical habitat. The following water bodies are included in this CHSU (see Table 12):

(A) The Nooksack River from its mouth at Puget Sound upstream approximately 63.7 km (39.6 mi) to its confluence with the North Fork Nooksack River and Middle Fork Nooksack River, including associated sloughs, provides foraging and overwintering habitat and an essential migratory corridor for amphidromous bull trout. Bertrand Creek from its mouth upstream approximately 13.7 km (8.5 mi) to the U.S.–Canadian border; Fishtrap Creek from its mouth upstream approximately 14.5 km (9.0 mi) to the U.S.–Canadian border; Anderson Creek from its mouth upstream approximately 10.3 km (6.4 mi) to the mouth of an unnamed tributary (Washington stream catalog number 0230); and Smith Creek from its mouth upstream 4.3 km (2.7 mi) to the mouth of McCauley Creek are productive salmon streams that provide the primary accessible tributary FMO habitat in the lower Nooksack River.

(B) North Fork Nooksack River from its confluence with the Middle Fork Nooksack River upstream approximately 39.6 km (24.6 mi) to Nooksack Falls provides spawning and rearing habitat upstream of its confluence with Canyon Creek and combined rearing and FMO habitat in its reaches downstream of Canyon Creek. Coal Creek from the mouth upstream 2.1 km (1.3 mi) to natural barrier; Racehorse Creek from its mouth upstream 1.8 km (1.1 mi) to a falls; Kendall Creek from its mouth upstream 4.3 km (2.7 mi) to the outlet of a wetland; and Bear Creek from its mouth upstream 3.7 km (2.3 mi) to the top of a slough complex are productive salmon streams that provide the primary accessible tributary FMO habitat in the North Fork Nooksack River.

The following tributaries from their mouths upstream to natural barriers provide accessible spawning and rearing habitat for the Lower North Fork Nooksack River and Canyon Creek : Maple Creek upstream 2.2 km (1.4 mi); West Slide Creek (stream catalog number 0422) upstream 0.8 km (0.5 mi); Aldrich Creek (stream catalog number 0423) upstream 1.0 km (0.6 mi); unnamed tributary between Boulder and Maple Creeks upstream 0.6 km (0.4 mi); Boulder Creek upstream 2.1 km (1.3 mi); unnamed tributary (stream catalog number 0425) upstream 0.8 km (0.5 mi); McDonald Creek (stream catalog number 0435) upstream 1.4 km (0.9 mi); Wildcat Creek upstream 1.6 km (1.0 mi); and Canyon Creek upstream approximately 5.0 km (3.1 mi) to a barrier falls. The following tributaries from their mouths upstream to natural barriers provide spawning and rearing habitat for the Middle North Fork Nooksack River local population: Hedrick Creek upstream 1.3 km (0.8 mi); Cornell Creek upstream 1.6 km (1.0 mi); its tributary, West Cornell Creek, upstream 1.3 km (0.8 mi); Gallop Creek upstream 1.4 km (0.9 mi); and its tributary, Son of Gallop, upstream 0.6 km (0.4 mi).

(C) The following tributaries from their mouths upstream to natural barriers or confluences provide spawning and rearing habitat for the Glacier Creek local population: Glacier Creek upstream approximately 11.1 km (6.9 mi) to the barrier at its confluence with Grouse Creek and the Glacier Creek tributaries—Little Creek upstream approximately 1.1 km (0.7 mi); Davis Creek upstream 0.3 km (0.2 mi); Thompson Creek upstream 3.4 km (2.1 mi); Deep Creek upstream 0.3 km (0.2 mi); unnamed tributary (stream catalog number 0476) upstream 0.5 km (0.3 mi); Coal Creek (upper) upstream 0.3 km (0.2 mi); and Falls Creek upstream 1.3 km (0.8 mi) to its confluence with Lookout Creek.

(D) The following tributaries from their mouths upstream to natural barriers provide spawning and rearing habitat for the Upper North Fork Nooksack River local population: Boyd Creek upstream 0.6 km (0.4 mi); Cascade Creek upstream 0.3 km (0.2 mi); Deerhorn Creek upstream 0.3 km (0.2 mi); Fossil Creek upstream 0.5 km (0.3 mi); Ditch Creek upstream 0.3 km (0.2 mi); Chainup Creek upstream 0.5 km (0.3 mi); Deadhorse Creek upstream 0.5 km (0.3 mi); Powerhouse Creek upstream 0.5 km (0.3 mi); and Wells Creek upstream 2.4 km (1.5 mi).

(E) Middle Fork Nooksack River from its confluence with the North Fork Nooksack River upstream approximately 28.5 km (17.7 mi) to a gradient barrier near its confluence with Ridley Creek provides spawning and rearing habitat upstream of Box Canyon and combined spawning, rearing, and FMO habitat in its reaches downstream of Box Canyon. The following tributaries from their mouths upstream to natural barriers all provide combined spawning, rearing, and FMO habitat for the Lower Middle Fork Nooksack River local population: Canyon Creek (Canyon Lake Creek) upstream 3.1 km (1.9 mi); unnamed tributary (stream catalog number 0347) upstream 2.4 km (1.5 mi); an unnamed tributary (stream catalog number 0349) upstream 0.5 km (0.3 mi) to its confluence with another unnamed tributary; Porter Creek upstream 1.4 km (0.9 mi); Peat Bog Creek (stream catalog number 0352) upstream 1.6 km (1.0 mi) to a lower lake outlet; and Bear Creek (stream catalog number 0353) upstream 1.6 km (1.0 mi) to a natural barrier.

(F) The following tributaries from their mouths upstream to natural barriers all provide spawning and rearing habitat for the Upper Middle Fork Nooksack River local population: Clearwater Creek upstream 7.2 km (4.5 mi); Rocky Creek upstream 1.1 km (0.7 mi); an unnamed tributary (stream catalog number 0367) upstream 0.3 km (0.2 mi); Galbraith Creek upstream 0.6 km (0.4 mi); an unnamed tributary (stream catalog number 0371) upstream 0.3 km (0.2 mi); Seymour Creek upstream 0.3 km (0.2 mi); an unnamed tributary (stream catalog number 0374) upstream 0.8 km (0.5 mi); Sister Creek upstream 1.6 km (1.0 mi); Warm Creek upstream 0.8 km (0.5 mi); Wallace Creek upstream 0.3 km (0.2 mi); an unnamed tributary (upstream of Wallace Creek) upstream 0.3 km (0.2 mi); Green Creek upstream 0.8 km (0.5 mi); Rankin Creek upstream 1.0 km (0.6 mi); and Ridley Creek upstream 2.9 km (1.8 mi). Although bull trout have been documented in many of these streams in the past, no recent surveys have been conducted to specifically detect bull trout. Once improved fish passage at Bellingham Diversion (just upstream of Box Canyon) is completed, it is expected that amphidromous bull trout passage will be restored to the upper Middle Fork Nooksack River. In addition, the prey base will increase as salmon recolonize the river, and bull trout abundance will increase, resulting in greater use of accessible tributaries.

(G) South Fork Nooksack River from its confluence with the mainstem Nooksack River upstream approximately 64.4 km (40.0 mi) to its headwaters provides spawning and rearing habitat upstream of Wanlick Creek and combined spawning, rearing, and FMO habitat in its

reaches downstream of Wanlick Creek. The following tributaries from their mouths upstream to natural barriers provide spawning and rearing habitat and additional FMO habitat for the Lower and Upper South Fork Nooksack River : Hutchinson Creek upstream 9.6 km (6.0 mi); an unnamed tributary (stream catalog number 0265) upstream 1.3 km (0.8 mi); Saxson Creek upstream 0.6 km (0.4 mi); Skookum Creek upstream 3.5 km (2.2 mi); Edfro Creek upstream 0.8 km (0.5 mi); an unnamed tributary (stream catalog number 0284) upstream 0.5 km (0.3 mi); Cavanaugh Creek upstream 1.0 km (0.6 mi); an unnamed tributary (stream catalog number 0290) upstream 0.5 km (0.3 mi); an unnamed tributary (stream catalog number 0291) upstream 1.0 km (0.6 mi); Fobes Creek upstream 0.5 km (0.3 mi); Plumbago Creek upstream 0.8 km (0.5 mi); Deer Creek upstream 1.0 km (0.6 mi); Howard Creek upstream 1.3 km (0.8 mi); McGinnis Creek upstream 0.3 km (0.2 mi); an unnamed tributary (stream catalog number 0315) upstream 0.2 km (0.1 mi); an unnamed tributary (stream catalog number 0316) upstream 0.3 km (0.2 mi); Bear Lake Outlet (stream catalog number 0317) upstream 0.3 km (0.2 mi); Three Lakes outlet (stream catalog number 0319) upstream 0.3 km (0.2 mi); an unnamed tributary (stream catalog number 0320) upstream 1.8 km (1.1 mi); unnamed tributary (stream catalog number 0321) upstream 0.6 km (0.4 mi); an unnamed tributary (downstream of Wanlick Creek) upstream 0.3 km (0.2 mi); Bell Creek upstream 0.5 km (0.3 mi); Elbow Creek/Lake Doreen outlet (stream catalog number 0331) upstream 2.7 km (1.7 mi) to its headwaters; and an unnamed tributary (stream catalog number 0332) upstream 1.0 km (0.6 mi).

(H) Wanlick Creek from the mouth upstream 7.2 km (4.5 mi) to its headwaters and its tributaries; an unnamed tributary (stream catalog number 0323) upstream 0.2 km (0.1 mi); Monument Creek (stream catalog number 0324) upstream 0.8 km (0.5 mi) to a natural barrier; and Loomis Creek upstream 1.6 km (1.0 mi) to its headwaters provide spawning and rearing habitat for the local population.

Table 12. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Nooksack River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Loomis Creek	WA	Adults and juveniles observed (S. Zyskowski, pers comm. 2002, 2003b; Huddle, pers. com., 2003).	Loomis Creek provides essential habitat used for spawning and rearing in the Wanlick Creek local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1215131 486610
Puget Sound—Nooksack River	Wells Creek	WA	Redds observed in 1993 (Huddle, in litt. 1995), and juveniles observed in the early 1990s (FERC 1997).	Wells Creek provides essential habitat used for spawning and rearing in the Upper North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1218080 489053
Puget Sound—Nooksack River	Powerhouse Creek	WA	Adults and juveniles observed in the late 1990s during the spawning period (Huddle, pers. comm. 2002b).	Powerhouse Creek provides essential habitat used for spawning and rearing in the Upper North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1218143 489075
Puget Sound—Nooksack River	Monument Creek (#0324)	WA	Multiple age classes of juvenile bull trout observed in 2002 (Ecotrust, in litt. 2002).	Monument Creek provides essential habitat used for spawning and rearing in the Wanlick Creek local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1218333 486522
Puget Sound—Nooksack River	Deadhorse Creek	WA	Adults and redds observed from 1982 to 2002 (Huddle, in litt. 1995; WDFW and USFS, in litt. 2001, 2002).	Deadhorse Creek provides essential habitat used for spawning and rearing in the Upper North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1218369 489040
Puget Sound—Nooksack River	Cascade Creek	WA	Adult observed in 2001, and adults and juveniles observed prior to 2000 (WDFW and USFS, in litt. 2001; Huddle, pers. comm. 2002a,b).	Cascade Creek provides essential habitat used for spawning and rearing in the Upper North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1218377 489038
Puget Sound—Nooksack River	Chainup Creek	WA	Spawning observed in the late 1990s (Sahlfeld, pers. comm. 2002).	Chainup Creek provides essential habitat used for spawning and rearing in the Upper North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1218391 489083

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Fossil Creek	WA	Juvenile bull trout collected during minnow trapping efforts in June 2004 (Currence 2007). Fossil Creek has not been extensively surveyed for bull trout.	Fossil Creek provides essential habitat used for spawning and rearing in the Upper North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1218488 489078
Puget Sound—Nooksack River	Ditch Creek	WA	Adults and juveniles observed in close proximity to creek mouth (Huddle, pers. comm. 2002a,b).	Ditch Creek provides essential habitat used for spawning and rearing in the Upper North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1218499 489035
Puget Sound—Nooksack River	Deerhorn Creek	WA	Young of year observed downstream of impassible culvert near natural barrier (Huddle, pers. comm. 2002b).	Deerhorn Creek provides essential habitat used for spawning and rearing in the Upper North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1218562 489056
Puget Sound—Nooksack River	Unnamed trib. (#0323)	WA	Currently accessible to SR bull trout. Stream is within the home watershed of a known local population (Wanlick Creek) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1218608 486547
Puget Sound—Nooksack River	Boyd Creek	WA	Adults and redds observed in 1992 and 1994 (Huddle, in litt. 1995).	Boyd Creek provides essential habitat used for spawning and rearing in the Upper North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1218619 489027
Puget Sound—Nooksack River	Wanlick Creek	WA	An adult bull trout and multiple age classes of juveniles were observed in 2002 below the mouth of "Monument Creek" (Ecotrust, in litt. 2002).	Wanlick Creek provides essential habitat used for spawning and rearing in the Wanlick Creek local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1218760 486443
Puget Sound—Nooksack River	Unnamed trib. downstream Wanlick Ck	WA	Potential bull trout redd recently observed (Salhfeld, pers. comm. 2002). Stream is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1218769 486409

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Unnamed trib. (#0321)	WA	Currently accessible to SR bull trout. This unnamed tributary is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. It is a productive salmon stream. Cold summer water temperatures based on FLIR data (Watershed Sciences LLC 2002b), indicates this stream has a high likelihood of supporting SR bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1218786 486296
Puget Sound—Nooksack River	Unnamed trib. (#0320)	WA	Currently accessible to SR bull trout. This unnamed tributary is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1218806 486255
Puget Sound—Nooksack River	Three Lakes Outlet (#0319)	WA	Currently accessible to SR bull trout. Three Lakes Outlet is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. Three Lakes Outlet has not been extensively surveyed for bull trout. Cold summer water temperatures based on FLIR data (Watershed Sciences LLC 2002b), indicates this stream has a high likelihood of supporting SR bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1218824 486250
Puget Sound—Nooksack River	Ridley Creek	WA	Currently accessible to SR bull trout. Ridley Creek is within the home watershed of a known local population of bull trout. Ridley Creek has not been extensively surveyed for bull trout. Currently inaccessible to anadromous salmon due to Bellingham Diversion.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1218982 487253
Puget Sound—Nooksack River	Bell Creek	WA	Spawning adults observed in South Fork Nooksack River near Bell Creek in the 1970s (Kraemer, pers. comm. 2002). Bull trout captured in the mainstem near Bell Creek in the 1990s (McGrath, pers. comm. 2003). Stream is within the home watershed of a known local population (Upper South Fork Nooksack River) of bull trout. Bell Creek has not been extensively surveyed for bull trout. Norgore and Anderson (1921) reported native char below the falls. A Dolly Varden population exists above the barrier. This stream is a headwater tributary to the upper South Fork Nooksack River. Cold summer water temperatures based on FLIR data (Watershed Sciences LLC 2002b), indicates this stream has a high likelihood of supporting SR bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1218989 486812

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Falls Creek	WA	Adults and redds observed in 1993 and 2002 (Huddle, in litt. 1995; WDFW and USFS, in litt. 2002).	Falls Creek provides essential habitat used for spawning and rearing in the Glacier Creek local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219007 488342
Puget Sound—Nooksack River	Unnamed trib. (#0476)	WA	Part of current distribution (WDFW 2002).	This unnamed tributary provides essential habitat used for spawning and rearing in the Glacier Creek local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219007 488443
Puget Sound—Nooksack River	Coal Creek (Upper)	WA	Spawning bull trout observed (Huddle, pers. comm. 2002b).	Coal Creek provides essential habitat used for spawning and rearing in the Glacier Creek local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219017 488388
Puget Sound—Nooksack River	Deep Creek	WA	Part of current distribution (WDFW 2002).	Deep Creek provides essential habitat used for spawning and rearing in the Glacier Creek local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219067 488689
Puget Sound—Nooksack River	Elbow Creek / Lake Doreen Outlet (#0331)	WA	Large adults observed in the mainstem South Fork Nooksack River near the confluence with "Elbow Creek" (S. Zyskowski, pers. comm. 2003b). Currently accessible to SR bull trout. Elbow Creek is within the home watershed of a known local population of bull trout. Elbow Creek has not been extensively surveyed for bull trout. This stream is a headwater tributary to the upper South Fork Nooksack River. Cold summer water temperatures based on FLIR data (Watershed Sciences LLC 2002b), indicates this stream has a high likelihood of supporting SR bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219099 486847
Puget Sound—Nooksack River	Bear Lake Outlet (#0317)	WA	Spawning bull trout observed in accessible reach (Huddle, pers. comm. 2002a). Cold summer water temperatures based on FLIR data (Watershed Sciences LLC 2002b), indicates this stream has a high likelihood of supporting SR bull trout.	Bear Lake Outlet provides essential habitat used for spawning and rearing in the Lower South Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219106 486073
Puget Sound—Nooksack River	Thompson Creek	WA	Adults and redds observed in 2002 (WDFW and USFS, in litt. 2002).	Thompson Creek provides essential habitat used for spawning and rearing in the Glacier Creek local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219133 488788

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Rankin Creek	WA	Juvenile native char reported by Norgore and Anderson (1921). Currently accessible to SR bull trout. Rankin Creek is within the home watershed of a known local population of bull trout. Rankin Creek has not been extensively surveyed for bull trout. Currently inaccessible to anadromous salmon due to Bellingham Diversion.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219189 487327
Puget Sound—Nooksack River	Unnamed trib. (#0332)	WA	Currently accessible to SR bull trout. This unnamed tributary is within the home watershed of a known local population (Upper South Fork Nooksack River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. This stream is a headwater tributary to the upper South Fork Nooksack River. Cold summer water temperatures based on FLIR data (Watershed Sciences LLC 2002b), indicates this stream has a high likelihood of supporting SR bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219200 486839
Puget Sound—Nooksack River	Unnamed trib. (#0316)	WA	Currently accessible to SR bull trout. This unnamed tributary is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219285 486053
Puget Sound—Nooksack River	Davis Creek	WA	Juvenile bull trout observed in mid-1980s (Green, pers. comm. 2003). Davis Creek has not been extensively surveyed for bull trout.	Davis Creek provides essential habitat used for spawning and rearing in the Glacier Creek local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219295 488818
Puget Sound—Nooksack River	Little Creek	WA	Spawning bull trout observed in 1981 (Schuett-Hames, in litt.. 1999). Little Creek has not been extensively surveyed for bull trout.	Little Creek provides essential habitat used for spawning and rearing in the Glacier Creek local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219327 488842
Puget Sound—Nooksack River	Green Creek	WA	Part of current distribution (WDFW 2002), but no recent data available. Resident size char were observed spawning in the mid-1970s (Kraemer, pers. comm. 2002). Green Creek has not been extensively surveyed for bull trout. Currently inaccessible to anadromous salmon due to Bellingham Diversion.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219365 487379
Puget Sound—Nooksack River	Glacier Creek	WA	Adults have been observed in the 1980s (Green, in litt. 1989; FERC 1997; Schuett-Hames, in litt. 1999). Adults and redds observed in tributaries (Thompson Creek and Falls Creek) in 2002.	Glacier Creek provides essential habitat used for spawning and rearing in the Glacier Creek local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219382 488924

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Son of Gallop	WA	Spawning bull trout observed in 1999 (Huddle, pers. comm. 2002a).	Son of Gallop Creek provides essential habitat used for spawning and rearing in the Middle North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219422 488889
Puget Sound—Nooksack River	Gallop Creek	WA	Adult bull trout and redds observed (Huddle, in litt. 1995; Sahlfeld, pers. comm. 2002; Sahlfeld, pers. comm. 2003).	Gallop Creek provides essential habitat used for spawning and rearing in the Middle North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219423 488944
Puget Sound—Nooksack River	Unnamed trib. upstream Wallace Ck	WA	Currently accessible to SR bull trout. This unnamed tributary is within the home watershed of a known local population of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. Currently inaccessible to anadromous salmon due to Bellingham Diversion.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219455 487419
Puget Sound—Nooksack River	Wallace Creek	WA	Part of current distribution (WDFW 2002), but no recent data available. Juvenile native char collected in the mid-1970s (Kraemer, pers. comm. 2002). Currently inaccessible to anadromous salmon due to Bellingham Diversion.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219497 487447
Puget Sound—Nooksack River	Unnamed trib. (#0315)	WA	Currently accessible to SR bull trout. This unnamed tributary is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219531 486078
Puget Sound—Nooksack River	McGinnis Creek	WA	Currently accessible to SR bull trout. McGinnis Creek is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. McGinnis Creek has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219586 486104
Puget Sound—Nooksack River	West Cornell Creek	WA	Currently accessible to SR bull trout. West Cornell Creek is within the home watershed of a known local population (Middle North Fork Nooksack River) of bull trout. It is a productive salmon stream. West Cornell Creek has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219593 488878

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Howard Creek	WA	Part of current distribution (WDFW 2002). Norgore and Anderson (1921) captured bull trout in the lower reaches. Currently accessible to SR bull trout. Howard Creek is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. Cold summer water temperatures based on FLIR data (Watershed Sciences LLC 2002b), indicates this stream has a high likelihood of supporting SR bull trout. Howard Creek has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219648 486091
Puget Sound—Nooksack River	Cornell Creek	WA	Historically reported use (Norgore and Anderson 1921), although no recent records. Currently accessible to SR bull trout. Cornell Creek is within the home watershed of a known local population (Middle North Fork Nooksack River) of bull trout. Cornell Creek has not been extensively surveyed for bull trout. It is a productive salmon stream.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219679 488987
Puget Sound—Nooksack River	Hedrick Creek	WA	Adult bull trout observed in lower reach (Huddle, pers. comm. 2002a).	Hendrick Creek provides essential habitat used for spawning and rearing in the Middle North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219697 488988
Puget Sound—Nooksack River	Warm Creek	WA	Multiple age classes observed in 1991 (Johnston, in litt. 1999). Juveniles noted during hydropower prelicensing surveys (FERC 2002). Norgore and Anderson (1921) reported advanced char fry in this stream. Warm Creek has not been extensively surveyed for bull trout. Currently inaccessible to anadromous salmon due to Bellingham Diversion.	Warm Creek provides essential habitat used for spawning and rearing in the Upper Middle Fork North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219773 487555
Puget Sound—Nooksack River	Sister Creek	WA	Part of current distribution (WDFW 2002), but no recent data available. Norgore and Anderson (1921) reported presence of native char in this stream. Sister Creek has not been extensively surveyed for bull trout. Currently inaccessible to anadromous salmon due to Bellingham Diversion.	Sister Creek provides essential habitat for spawning and rearing in the Upper Middle Fork North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219871 487553
Puget Sound—Nooksack River	Canyon Creek	WA	Juvenile and adult bull trout observed as far as barrier (Zyskowski, in litt. 1991; Huddle, pers. comm. 2002a).	The draft recovery chapter identifies Canyon Creek as the only spawning and rearing tributary in the Canyon Creek local population. It is essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219880 489058

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Unnamed trib. (#0374)	WA	Part of current distribution (WDFW 2002), but no recent data available. This unnamed tributary is within the home watershed of a known local population of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. Currently inaccessible to anadromous salmon due to Bellingham Diversion.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219929 487565
Puget Sound—Nooksack River	Rocky Creek	WA	Connected to known occupied stream (Clearwater Creek). Rocky Creek is within the home watershed of a known local population of bull trout. Rocky Creek has not been extensively surveyed for bull trout. Low gradient spawning habitat available. Currently inaccessible to anadromous salmon due to Bellingham Diversion.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219957 488094
Puget Sound—Nooksack River	Wildcat Creek	WA	Currently occupied by bull trout (WDFW 2002). Wildcat Creek is within the home watershed of a known local population of bull trout. A juvenile bull trout was collected in the lower reach during minnow trapping surveys in October 2004 (Currence 2007).	Wildcat Creek provides essential habitat used for spawning and rearing in the Lower North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1219996 489091
Puget Sound—Nooksack River	Seymour Creek	WA	Part of current distribution (WDFW 2002), but no recent data available. Seymour Creek is within the home watershed of a known local population of bull trout. Seymour Creek has not been extensively surveyed for bull trout. Currently inaccessible to anadromous salmon due to Bellingham Diversion.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1220089 487579
Puget Sound—Nooksack River	Unnamed trib. (#0371)	WA	Part of current distribution (WDFW 2002), but no recent data available. This unnamed tributary is within the home watershed of a known local population of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. Currently inaccessible to anadromous salmon due to Bellingham Diversion.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1220145 487573
Puget Sound—Nooksack River	McDonald Creek (#0435)	WA	Adult bull trout have been observed (Huddle, pers. comm. 2002a; WDFW 2002). Stream is within the home watershed of a known local population of bull trout. Stream has not been extensively surveyed for bull trout.	McDonald Creek provides essential habitat used for spawning and rearing in the Lower North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1220147 489208

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Galbraith Creek	WA	Part of current distribution (WDFW 2002), but no recent data available. Galbraith Creek is within the home watershed of a known local population of bull trout. Galbraith Creek has not been extensively surveyed for bull trout. Bull trout noted historically (Pautzke 1943). Currently inaccessible to anadromous salmon due to Bellingham Diversion.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1220175 487593
Puget Sound—Nooksack River	Unnamed trib. (#0425)	WA	Historically a tributary to Boulder Creek, now mouth is adjacent and immediately down river of Boulder Creek. This unnamed tributary is within the home watershed of a known local population (Lower North Fork Nooksack River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. It is a productive salmon stream. 0.25 miles above culvert barrier is available once the culvert is replaced.	This is an accessible tributary to Boulder Creek. The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1220300 489275
Puget Sound—Nooksack River	Unnamed trib. (#0367)	WA	Identified as part of current distribution (WDFW 2002), but no recent data available. This unnamed tributary is within the home watershed of a known local population of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. Currently inaccessible to anadromous salmon due to Bellingham Diversion.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1220352 487650
Puget Sound—Nooksack River	Boulder Creek	WA	Part of current SR distribution (WDFW 2002). Juvenile and pre-staging adult bull trout were observed in upper reaches in 1987 (Johnston, in litt. 2000).	The draft recovery chapter identifies Boulder Creek as likely the most important spawning tributary in the Lower North Fork Nooksack River local population. It is essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1220361 489247
Puget Sound—Nooksack River	Unnamed trib. downstream Boulder Ck	WA	Connected to known occupied stream (North Fork Nooksack River). This unnamed tributary is within the home watershed of a known local population (Lower North Fork Nooksack River) of bull trout. It is a productive salmon stream. This unnamed tributary has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1220443 489259
Puget Sound—Nooksack River	Clearwater Creek	WA	Part of current distribution (WDFW 2002). Subadult or resident fish reported spawning in 1986 (Johnston, in litt. 1999). Currently inaccessible to anadromous salmon due to Bellingham Diversion. Historically reported by Norgore and Anderson (1921).	Clearwater Creek provides essential habitat used for spawning and rearing in the Upper Middle Fork North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1220462 487706

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Aldrich Creek (#0423)	WA	Connected to known occupied stream (North Fork Nooksack River). Aldrich Creek is within the home watershed of a known local population (Lower North Fork Nooksack River) of bull trout. It is a productive salmon stream. Aldrich Creek has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1220500 489215
Puget Sound—Nooksack River	West Slide Creek (#0422)	WA	Connected to known occupied stream (North Fork Nooksack River). West Side Creek is within the home watershed of a known local population (Lower North Fork Nooksack River) of bull trout. It is a productive salmon stream. West Side Creek has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1220653 489168
Puget Sound—Nooksack River	Maple Creek	WA	Currently occupied by migratory bull trout (Huddle, pers. comm. 2002a; Ecotrust, in litt. 2002). It is a productive salmon stream important for migratory bull trout foraging.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream lies within the Lower North Fork Nooksack local population.	1220779 489121
Puget Sound—Nooksack River	Deer Creek	WA	Young of the year observed off the mouth (Dunphy, pers. comm. 2002). Currently accessible to SR bull trout. Deer Creek is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. Deer Creek has not been extensively surveyed for bull trout. It is a productive salmon stream.	Deer Creek provides essential habitat used for spawning and rearing in the Lower South Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1220940 486101
Puget Sound—Nooksack River	Plumbago Creek	WA	Juvenile bull trout have been found in close proximity to the mouth (Dunphy, pers. comm. 2002). Currently accessible to SR bull trout. Plumbago Creek is within the home watershed (Lower South Fork Nooksack River) of known local population of bull trout. Plumbago Creek has not been extensively surveyed for bull trout. Cold summer water temperatures based on FLIR data (Watershed Sciences LLC 2002b), indicates this stream has a high likelihood of supporting SR bull trout. It is a productive salmon stream.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1220958 486117
Puget Sound—Nooksack River	Unnamed trib. (#0265)	WA	Currently accessible to SR bull trout. This is a headwater tributary to Hutchinson Creek. Known steelhead and cutthroat use. This unnamed tributary has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1221079 487434

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Fobes Creek	WA	Currently accessible to SR bull trout. Fobes Creek is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. Fobes Creek has not been extensively surveyed for bull trout. It is a productive salmon stream.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1221107 486225
Puget Sound—Nooksack River	Unnamed trib. (#0291)	WA	Currently accessible to SR bull trout. This unnamed tributary is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. It is a productive salmon stream.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1221147 486364
Puget Sound—Nooksack River	Unnamed trib. (#0290)	WA	Currently accessible to SR bull trout. This unnamed tributary is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. It is a productive salmon stream.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1221152 486348
Puget Sound—Nooksack River	Cavanaugh Creek	WA	Dead adult observed in lower reach in 2002 (Ecotrust, in litt. 2002). Cavanaugh Creek is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. Cavanaugh Creek has not been extensively surveyed for bull trout. It is a productive salmon stream.	Cavanaugh Creek provides essential habitat used for spawning and rearing in the Lower South Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1221193 486469
Puget Sound—Nooksack River	Unnamed trib. (#0284)	WA	Currently accessible to SR bull trout. This unnamed tributary is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. It is a productive salmon stream.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1221201 486496
Puget Sound—Nooksack River	Peat Bog Creek (#0352)	WA	Part of current distribution (WDFW 2002). Peat Bog Creek is within the home watershed of a known local population of bull trout. Peat Bog Creek has not been extensively surveyed for bull trout. It is a productive salmon stream, and important for migratory bull trout foraging.	Peat Bog Creek provides essential habitat used for foraging, and potentially spawning and rearing in the Lower Middle Fork North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area. The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1221205 487903

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Bear Creek (#0353)	WA	Connected to a known occupied stream (Middle Fork Nooksack River). Bear Creek is within the home watershed of a known local population of bull trout (Lower Middle Fork Nooksack River). Bear Creek has not been extensively surveyed for bull trout. It is a productive salmon stream, and important for migratory bull trout foraging.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1221216 487878
Puget Sound—Nooksack River	Edfro Creek	WA	Currently accessible to SR bull trout. Edfro Creek is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. Edfro Creek has not been extensively surveyed for bull trout. Juvenile collected in the late 1970s at the mouth (Kraemer, pers. comm. 2002). It is a productive salmon stream.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1221254 486609
Puget Sound—Nooksack River	Porter Creek	WA	Part of current distribution (WDFW 2002). Porter Creek is within the home watershed of a known local population of bull trout. Porter Creek has not been extensively surveyed for bull trout.	Porter Creek provides essential habitat used for foraging, and potentially spawning and rearing in the Lower Middle Fork North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1221261 487994
Puget Sound—Nooksack River	Unnamed trib. (#0349)	WA	Part of current distribution (WDFW 2002). This unnamed tributary is within the home watershed of a known local population (Lower Middle Fork Nooksack River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. It is a productive salmon stream, and important for bull trout foraging.	This unnamed tributary provides essential habitat used for foraging, and potentially spawning and rearing in the Lower Middle Fork North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1221294 488125
Puget Sound—Nooksack River	Unnamed trib. (#0347)	WA	Part of current distribution (WDFW 2002). This unnamed tributary is within the home watershed of a known local population (Lower Middle Fork Nooksack River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. It is a productive salmon stream important for bull trout foraging.	This unnamed tributary provides essential habitat used for foraging, and potentially spawning and rearing in the Lower Middle Fork North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area.	1221397 488286
Puget Sound—Nooksack River	Skookum Creek	WA	Part of current distribution (WDFW 2002). Adult bull trout observed in lower reach in late summer around 1990 (Dunphy, pers comm. 2002). Skookum Creek has not been extensively surveyed for bull trout, but has similar temperature profiles to Hutchinson Creek (Watershed Sciences LLC 2002b). It is a productive salmon stream.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1221404 486705

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Canyon Creek (Canyon Lake Creek)	WA	Part of current distribution (WDFW 2002). Canyon Creek is within the home watershed of a known local population (Lower Middle Fork Nooksack River) of bull trout. Canyon Creek has not been extensively surveyed for bull trout. Native char use was historically reported (Norgore and Anderson 1921; Pautzke 1943).	Canyon "Lake" Creek provides essential habitat used for foraging, and potentially spawning and rearing in the Lower Middle Fork North Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1221428 488320
Puget Sound—Nooksack River	Bear Creek	WA	A productive salmon stream likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout. Bear Creek has not been extensively surveyed for bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1221435 488934
Puget Sound—Nooksack River	Racehorse Creek	WA	Currently occupied by migratory bull trout (WDFW 2002). A productive salmon stream important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1221443 488886
Puget Sound—Nooksack River	Kendall Creek	WA	Currently occupied by migratory bull trout (Huddle, pers. comm. 2002a). One male and one female bull trout intercepted at Kendal Creek hatchery weir in 2000 (Hammer, in litt. 2003). A productive salmon stream important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1221475 488869
Puget Sound—Nooksack River	Coal Creek	WA	A productive salmon stream, and likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout. Coal Creek has not been extensively surveyed for bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1221513 488809

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Middle Fork Nooksack River	WA	Juvenile sized bull trout collected in 1993 (STS Heislers Creek Hydro 1994). Adults captured by fisherman in the early 1990s (Huddle, pers. comm. 2002b) and in 2000 (Lee, pers. comm. 2003). Currently inaccessible to anadromous salmon due to Bellingham Diversion.	This segment of the Middle Fork Nooksack River provides essential spawning and rearing, and foraging and migration habitat for fluvial and anadromous life history forms. It is essential for maintaining the current distribution, abundance, and productivity of bull trout within the core area, and provides essential connectivity between SR habitats and marine FMO habitat.	1221541 488343.2
Puget Sound—Nooksack River	Middle Fork Nooksack River	WA	Pre-spawning adult bull trout observed below diversion dam (Zapel, in litt. 2001), and immediately below Box Canyon (Kraemer, pers. comm. 2002). Juveniles were collected in 2002 (Anchor, in litt. 2002).	This segment of the Middle Fork Nooksack River provides essential spawning and rearing, and foraging and migration habitat for fluvial and anadromous life history forms. It is essential for maintaining the current distribution, abundance, and productivity of bull trout within the core area, and provides essential connectivity between SR habitats and marine FMO habitat.	1221541 488343.1
Puget Sound—Nooksack River	North Fork Nooksack River	WA	Currently occupied by migratory bull trout (WDFW 2002; Castle, pers. comm. 2003; Lee, pers. comm. 2003). Highly productive salmon areas, and important for seasonal foraging by migratory bull trout (Castle, pers. comm. 2003).	This segment of the North Fork Nooksack River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and marine FMO habitat and indirectly maintaining abundance and productivity.	1221541 488353.1
Puget Sound—Nooksack River	North Fork Nooksack River	WA	Adult bull trout have been captured within a mile of the falls (Sahlfeld, pers. comm., 2002; Sahlfeld, pers. comm., 2003), and observed spawning in side channels (Huddle, pers. comm. 2002b). In October 2003, an adult in spawning colors was captured near confluence with Deadhorse Creek (Currence, in litt. 2003). Norgore and Anderson (1921) captured advanced bull trout fry in backwater areas within 1.5 miles of the falls.	This segment of the North Fork Nooksack River provides essential rearing and spawning habitat for fluvial and anadromous life history forms. It is essential for maintaining the current distribution, abundance, and productivity of bull trout within the core area, and provides essential connectivity between SR habitats and marine FMO habitat.	1221541 488353.4
Puget Sound—Nooksack River	Saxson Creek	WA	Currently accessible to SR bull trout. Saxson Creek is within the home watershed of a known local population (Lower South Fork Nooksack River) of bull trout. Saxson Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least foraging.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1221621 486888

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Hutchinson Creek	WA	Juveniles observed up to RM 5 (Ecotrust, in litt. 2002), and in lower reaches (Maudlin et al. 2002). It is a productive salmon stream.	Hutchinson Creek provides essential habitat used for spawning and rearing in the Lower South Fork Nooksack River local population. It is essential for maintaining distribution, abundance, and productivity of bull trout within the core area. Huchinson Creek is likely the downstream extent of spawning in the South Fork Nooksack River, and therefore critical to maintaining spawning distribution in the core area.	1221779 487070
Puget Sound—Nooksack River	South Fork Nooksack River	WA	Currently occupied by migratory bull trout (WDFW 2002; Maudlin et al. 2002; Lee, pers. comm. 2003).	This segment of the South Fork Nooksack River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and marine FMO habitat and indirectly maintaining abundance and productivity.	1222021 488091.1
Puget Sound—Nooksack River	South Fork Nooksack River	WA	Multiple age classes captured or observed in this reach (WDFW, in litt. 1994; Dunphy, pers. comm. 2002). It is a productive salmon river.	This segment of the South Fork Nooksack River provides essential spawning and rearing, and foraging and migration habitat for fluvial and anadromous life history forms. It is essential for maintaining the current distribution, abundance, and productivity of bull trout within the core area, and provides essential connectivity between SR habitats and marine FMO habitat	1222021 488091.2
Puget Sound—Nooksack River	Smith Creek	WA	Subadult collected in minnow trap in lower reach (Nooksack Tribe, in litt. 2002). It is a productive salmon stream, and important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs (one of only 5 FMO tributaries greater than 20 cfs in the lower Nooksack River).	1222985 488557
Puget Sound—Nooksack River	Anderson Creek	WA	Currently accessible to anadromous and fluvial bull trout. Adult observed in Nooksack River immediately downstream of mouth (Nooksack Tribe, in litt. 2003). Stream has not been extensively surveyed for bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs (one of only 5 FMO tributaries greater than 20 cfs in the lower Nooksack River).	1223193 488677

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	Fishtrap Creek	WA	Productive salmon stream and likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout. Stream has not been extensively surveyed for bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs (one of only 5 FMO tributaries greater than 20 cfs in the lower Nooksack River).	1225218 489117
Puget Sound—Nooksack River	Bertrand Creek	WA	Productive salmon stream, and likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout. Bertrand Creek has not been extensively surveyed for bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs (one of only 5 FMO tributaries greater than 20 cfs in the lower Nooksack River).	1225334 489122
Puget Sound—Nooksack River	Nooksack River	WA	Currently occupied by migratory bull trout, with sightings documented throughout the mainstem (WDFW 1998; Lummi Nation, in litt. 2003; Nooksack Tribe, in litt. 2003; Goetz et al. 2007).	Nooksack River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and marine FMO habitat and indirectly maintaining abundance and productivity.	1225982 487712
Puget Sound—Nooksack River	Nooksack River (Slater Slough)	WA	Currently occupied by migratory bull trout, with sightings documented throughout the mainstem (WDFW 1998; Lummi Nation, in litt. 2003; Nooksack Tribe, in litt. 2003; Goetz et al. 2007).	Nooksack River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and marine FMO habitat and indirectly maintaining abundance and productivity.	1225982 487712
Puget Sound—Nooksack River	North Fork Nooksack River	WA	Currently occupied by migratory bull trout (WDFW 2002).	This segment of the North Fork Nooksack River provides essential rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and marine FMO habitat and maintaining abundance and productivity.	1221541 488353.2
Puget Sound—Nooksack River	North Fork Nooksack River	WA	Bull trout and redds reported in side channels and sloughs (Huddle, in litt. 1995; Dunphy, pers. comm. 2002).	This segment of the North Fork Nooksack River provides essential rearing and spawning habitat for fluvial and anadromous life history forms. It is essential for maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1221541 488353.3

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Nooksack River	South Fork Nooksack River	WA	Adults have been observed in this reach during recent spawning surveys (WDFW and USFS, in litt. 2002; S. Zyskowski, pers. comm. 2003b). Spawning adults observed in South Fork Nooksack River near Bell Creek in 1970s (Kraemer, pers. comm. 2002).	This segment of the South Fork Nooksack River provides essential spawning and rearing, and foraging and migration habitat for fluvial and anadromous life history forms. It is essential for maintaining the current distribution, abundance, and productivity of bull trout within the core area, and provides essential connectivity between SR habitats and marine FMO habitat	1222021 488091.3

2.3. Lower Skagit River Critical Habitat Subunit

The Lower Skagit River CHSU is essential to bull trout conservation because it represents the stronghold for the amphidromous life history form and the species, within the Coastal RU. This CHSU contains diverse life history forms and represents a significant distribution of the species within the Puget Sound region and the RU. Extensive portions of the habitat are within protected areas (North Cascades National Park, Glacier Peak Wilderness, and Henry Jackson Wilderness) (see Appendix 1 for more detailed information).

The Lower Skagit River CHSU is located on the western slopes of the Cascade Range. The Skagit River system initiates from British Columbia, Canada, and flows southwest into Ross Lake, a transboundary reservoir formed by Ross Dam. Immediately below Ross Dam is Diablo Lake, a reservoir has formed behind Diablo Dam. The Skagit River flows through one more reservoirs (Gorge Lake), formed by Gorge Dam and then continues west, discharging into Skagit Bay of Puget Sound. The Lower Skagit River CHSU includes the mainstem, its major forks, lakes/reservoirs, and associated tributaries downstream of Diablo Dam. A total of approximately 689.0 km (428.1 mi) of stream and 2,842.0 ha (7,023.0 ac) of surface area in three reservoirs is designated as critical habitat. The following water bodies are included in this CHSU (see Table 13):

(A) The Skagit River from its mouth at Puget Sound upstream approximately 142.2 km (88.4 mi) to Diablo Dam, including the North Fork Skagit River (10.3 km (6.4 mi)) and South Fork Skagit River (12.4 km (7.7 mi)) and associated sloughs readily connected to these forks and Puget Sound (Freshwater, Brandstedt, Steamboat, Tom Moore, Deepwater, and Crooked Sloughs), provide foraging and overwintering habitat and an essential migratory corridor for amphidromous bull trout. Rearing habitat occurs upstream of the Skagit River's confluence with the Sauk River. The following tributaries from their mouths upstream to natural or manmade barriers or confluence provide FMO habitat outside of the local population for the Lower Skagit River core area: Nookachamps Creek upstream 19.1 km (11.9 mi) to its confluence with a unnamed tributary (stream catalog number 0261); Gilligan Creek upstream 2.1 km (1.3 mi); Wiseman Creek upstream 2.2 km (1.4 mi); Day Creek upstream 10.8 km (6.7 mi); Jones Creek upstream 2.6 km (1.6 mi); Cumberland Creek upstream 1.9 km (1.2 mi); Alder Creek upstream 3.9 km (2.4 mi) to its confluence with a unnamed tributary (stream catalog number 0360); O'Toole Creek upstream 1.9 km (1.2 mi); Mill Creek upstream 2.7 km (1.7 mi); Grandy Creek upstream 9.2 km (5.7 mi) to the outlet of Grandy Lake; Pressentin Creek upstream 1.8 km (1.1 mi); Finney Creek upstream 19.5 km (12.1 mi); Jackman Creek upstream 2.2 km (1.4 mi); Rocky Creek upstream 1.1 km (0.7 mi); Corkindale Creek upstream 1.6 km (1.0 mi); Diobsud Creek upstream 2.9 km (1.8 mi); and Alma Creek 1 upstream 1.4 km (0.9 mi). The mainstem Skagit River and mouths of listed and unlisted tributaries also provide some post-dispersal rearing habitat.

(B) Goodell Creek from its mouth upstream approximately 15.9 km (9.9 mi) to a gradient barrier provides spawning and rearing habitat for the local population. Newhalem Creek from its mouth upstream 1.0 km (0.6 mi) to a natural barrier provides spawning and rearing habitat for the local population. Gorge Lake (89.0 ha (219.9 ac)) upstream of Gorge Dam provides FMO habitat for the Stetattle Creek local population of adfluvial bull trout. This lake may also provide some juvenile rearing habitat, especially near the mouth of the lake's spawning tributaries.

Stetattle Creek from the mouth upstream approximately 1.3 km (0.8 mi) to a natural barrier provides FMO habitat and spawning and rearing habitat for the local population.

(C) Baker River from its confluence with the Skagit River upstream approximately 18.7 km (11.6 mi) to a natural barrier provides combined spawning and rearing and FMO habitat upstream of its confluence with Baker Lake and FMO habitat in reaches downstream of Baker Lake. Lake Shannon (832.0 ha (2,056.0 ac)) and its associated arms provide FMO habitat, and Baker Lake (1,921.0 ha (4,747.0 ac)) and its associated arms provide FMO habitat for the Baker Lake local population of adfluvial bull trout. Baker Lake may also provide some juvenile rearing habitat, especially near the mouths of the lake's spawning tributaries. Sulphur Creek from its mouth upstream 1.8 km (1.1 mi) to a natural barrier provides the available spawning and rearing habitat for the Sulphur Creek (Lake Shannon) potential local population. The following tributaries from their mouths or confluence upstream to natural barriers provide spawning and rearing habitat for the Baker Lake local population: Park Creek from its confluence with Baker Lake upstream 2.4 km (1.5 mi); Swift Creek from its confluence with Baker Lake upstream 1.6 km (1.0 mi); and the upper Baker River tributaries—Lake Creek upstream 0.8 km (0.5 mi); Sulphide Creek upstream 2.1 km (1.3 mi); Crystal Creek upstream 0.8 km (0.5 mi); Bald Eagle Creek upstream 1.3 km (0.8 mi); and Pass Creek upstream 0.6 km (0.4 mi).

(D) Sauk River from its confluence with the Skagit River upstream approximately 62.6 km (38.9 mi) to its confluence with the North Fork Sauk River and South Fork Sauk River provides combined spawning, rearing, and FMO habitat for the local population in the Sauk River system. White Creek from its mouth upstream 1.3 km (0.8 mi) and Dan Creek from its mouth upstream 4.7 km (2.9 mi) to natural barriers provide FMO habitat. Falls Creek from its mouth upstream 1.4 km (0.9 mi) to a natural barrier and North Fork Sauk River from its confluence with the South Fork Sauk River upstream 1.8 km (1.1 mi) to North Fork Falls provide spawning and rearing habitat for the Forks of Sauk River local population.

(E) Suiattle River from its confluence with the Sauk River upstream approximately 60.8 km (37.8) to a natural barrier provides spawning and rearing habitat upstream of the lower extent of the Upper Suiattle River and combined spawning, rearing, and FMO habitat in its reaches downstream of the lower extent for the local population. Big Creek from its mouth upstream 1.0 km (0.6 mi) to a natural barrier provides combined rearing and foraging habitat. The following tributaries from their mouths upstream to natural barriers, headwaters, or confluences provide spawning and rearing habitat for local bull trout populations: Tenas Creek upstream 2.4 km (1.5 mi); Straight Creek upstream 2.2 km (1.4 mi) and its tributary Black Creek upstream 1.6 km (1.0 mi); Buck Creek upstream 12.2 km (7.6 mi) to its headwaters and its tributary Horse Creek upstream 2.6 km (1.6 mi) to the mouth of its unnamed tributary (stream catalog number 0839); Lime Creek upstream approximately 4.2 km (2.6 mi) to the mouth of Meadow Creek; Downey Creek upstream 10.6 km (6.6 mi) and its tributary Goat Creek upstream 0.6 km (0.4 mi); Sulphur Creek upstream 9.6 km (6.0 mi); Milk Creek upstream 5.1 km (3.2 mi); Canyon Creek upstream 1.3 km (0.8 mi); Vista Creek upstream 1.9 km (1.2 mi); Miners Creek upstream 0.6 km (0.4 mi) to the mouth of an unnamed tributary (stream catalog number 1049); Dusty Creek upstream 5.1 km (3.2 mi) to accessible headwaters; and Small Creek upstream approximately 2.4 km (1.5 mi) to accessible headwaters.

(F) White Chuck River from its confluence with the Sauk River upstream approximately 33.1 km (20.6 mi) to a natural barrier provides spawning and rearing habitat for the Lower White Chuck River and Upper White Chuck River. The following tributaries from their mouths

upstream to natural barriers provide spawning and rearing habitat for the Lower White Chuck River local population: Black Oak Creek upstream 1.0 km (0.6 mi); unnamed tributary (stream catalog number 1119) upstream 0.5 km (0.3 mi); Crystal Creek upstream 0.3 km (0.2 mi); Pugh Creek upstream 1.0 km (0.6 mi); Owl Creek upstream 1.0 km (0.6 mi); and Camp Creek upstream 1.6 km (1.0 mi). The following tributaries from their mouths upstream provide spawning and rearing habitat for the Upper White Chuck River local population: Fire Creek upstream 1.0 km (0.6 mi); Fourteenmile Creek upstream 1.9 km (1.2 mi) to its headwaters; Pumice Creek upstream 7.1 km (4.4 mi) to its headwaters; and Glacier Creek upstream 3.2 km (2.0 mi) to accessible headwaters.

(G) South Fork Sauk River from its confluence with the North Fork Sauk River upstream 17.5 km (10.9 mi) to its confluence with Glacier Creek and Seventysix Gulch provides spawning and rearing habitat for the Forks of Sauk River local population downstream of Monte Cristo Lake and for the Upper South Fork Sauk River local population upstream from Monte Cristo Lake. Martin Creek from its mouth upstream 1.6 km (1.0 mi) and Merry Brook Creek from its mouth upstream 0.3 km (0.2 mi) to natural barriers; Bedal Creek from its mouth upstream 5.1 km (3.2 mi) to its headwaters; Chocwick Creek from its mouth upstream 2.6 km (1.6 mi) to its headwaters; and Elliot Creek from its mouth upstream 5.3 km (3.3 mi) to its confluence with its unnamed tributary (stream catalog number 1216) draining Ida Lake all provide spawning and rearing habitat for the Forks of Sauk River local population. The following tributaries from their mouths or confluence upstream to a natural barrier provide spawning and rearing habitat for the Upper South Fork Sauk River local population: Weden Creek upstream 1.9 km (1.2 mi); Seventysix Gulch from its confluence with Glacier Creek upstream 1.6 km (1.0 mi); and Glacier Creek from its confluence with Seventysix Gulch upstream 2.1 km (1.3 mi).

(H) Illabot Creek from its confluence with the Skagit River upstream approximately 22.0 km (13.7mi) to accessible headwaters and its tributaries—Arrow Creek upstream 2.1 km (1.3 mi) to accessible headwaters and Otter Creek upstream 0.2 km (0.1 mi) to natural barriers—provide spawning and rearing habitat for the Illabot Creek local population.

(I) The Cascade River from its confluence with the Skagit River upstream approximately 29.3 km (18.2 mi) to its confluence with the North Fork Cascade River and South Fork Cascade River provides spawning and rearing habitat upstream of the mouth of Hard Creek for the Cascade River local population and combined rearing, foraging, and migration habitat below the mouth of Hard Creek. Jordan Creek upstream 0.8 km (0.5 mi); Boulder Creek upstream 0.6 km (0.4 mi); Marble Creek upstream 2.6 km (1.6 mi); and Sibley Creek upstream 0.6 km (0.4 mi) to natural barriers provide combined rearing, foraging, and migration habitat. Kindy Creek upstream 3.7 km (2.3 mi) to its confluence with Mutchler Creek and Sonny Boy Creek upstream 4.5 km (2.8 mi) to the extent of accessible headwater habitat provide spawning and rearing habitat for the Cascade River local population. South Fork Cascade River from its confluence with the North Fork Cascade River upstream approximately 10.1 km (6.3 mi) to the upper extent of accessible headwater habitat provides spawning and rearing habitat for the South Fork Cascade River local population.

(J) Bacon Creek from its confluence with the Skagit River upstream approximately 13.3 km (8.3 mi) to a natural barrier and its tributary East Fork Bacon Creek from its confluence with Bacon Creek upstream 6.4 km (4.0 mi) to the extent of accessible habitat provide spawning and rearing habitat for the Baker Creek local population.

Table 13. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Lower Skagit River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	Park Creek	WA	Three adult and 1 subadult bull trout observed during November 2003 surveys (Greenberg and Appy, in litt. 2003; Appy, pers. comm. 2004).	Park Creek provides essential habitat for spawning and rearing in the Baker Lake local population. It is essential for maintaining distribution, abundance, and productivity.	1207147 487511
Puget Sound—Lower Skagit River	Small Creek	WA	Part of current rearing distribution (WDFW 2002). Small Creek has not been extensively surveyed for bull trout.	Small Creek provides essential habitat used for spawning and rearing in the Suaittle River local population. It is essential for maintaining distribution, abundance, and productivity.	1210051 481624
Puget Sound—Lower Skagit River	Dusty Creek	WA	Part of current rearing distribution (WDFW 2002). Dusty Creek has not been extensively surveyed for bull trout.	Dusty Creek provides essential habitat used for spawning and rearing in the Suaittle River local population. It is essential for maintaining distribution, abundance, and productivity.	1210179 481771
Puget Sound—Lower Skagit River	Miners Creek	WA	Part of current rearing distribution (WDFW 2002). Miners Creek has not been extensively surveyed for bull trout.	Miners Creek provides essential habitat used for spawning and rearing in the Suaittle River local population. It is essential for maintaining distribution, abundance, and productivity.	1210298 481866
Puget Sound—Lower Skagit River	Vista Creek	WA	Part of current rearing distribution (WDFW 2002). Vista Creek has not been extensively surveyed for bull trout.	Vista Creek provides essential habitat used for spawning and rearing in the Suaittle River local population. It is essential for maintaining distribution, abundance, and productivity.	1210456 481942
Puget Sound—Lower Skagit River	Canyon Creek	WA	Part of current rearing distribution (WDFW 2002). Canyon Creek has not been extensively surveyed for bull trout.	Canyon Creek provides essential habitat used for spawning and rearing in the Suaittle River local population. It is essential for maintaining distribution, abundance, and productivity.	1210873 482111
Puget Sound—Lower Skagit River	Stetattle Creek	WA	Part of current distribution (WDFW 2002). One subadult bull trout (~250 mm) was observed during snorkel surveys in 2003 (Connor, in litt. 2003c), and six adults were observed in 2004 (Shannon, in litt. 2004). This is currently the only potential SR stream associated with the isolated population within Gorge Lake.	Stetattle Creek provides essential habitat that would be used for spawning and rearing in the Stetattle Creek potential local population. It is essential for maintaining distribution, abundance, and productivity.	1211484 487165
Puget Sound—Lower Skagit River	Goat Creek	WA	Part of current SR distribution (WDFW 2002). Goat Creek is within the home watershed of a known local population of bull trout. Goat Creek has not been extensively surveyed for bull trout.	Goat Creek provides essential habitat used for spawning and rearing in the Downey Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1211559 483282

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	Milk Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	Milk Creek provides essential habitat used for spawning and rearing in the Milk Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1211616 482214
Puget Sound—Lower Skagit River	South Fork Cascade River	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	South Fork Cascade River provides essential habitat used for spawning and rearing in the South Fork Cascade River local population. It is essential for maintaining distribution, abundance, and productivity.	1211631 484638
Puget Sound—Lower Skagit River	Sulphur Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	Sulphur Creek provides essential habitat used for spawning and rearing in the Sulphur Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1211920 482471
Puget Sound—Lower Skagit River	Sonny Boy Creek	WA	Part of current SR distribution (WDFW 2002).	Sonny Boy Creek provides essential habitat used for spawning and rearing in the Cascade River local population. It is essential for maintaining distribution, abundance, and productivity.	1211956 484620
Puget Sound—Lower Skagit River	Glacier Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	Glacier Creek provides essential habitat used for spawning and rearing in the Upper South Fork Sauk River local population. It is essential for maintaining distribution, abundance, and productivity.	1212024 481301
Puget Sound—Lower Skagit River	Kindy Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	Kindy Creek provides essential habitat used for spawning and rearing in the Cascade River local population. It is essential for maintaining distribution, abundance, and productivity.	1212069 484635
Puget Sound—Lower Skagit River	Fourteenmile Creek	WA	Connected to a known occupied stream. Fourteenmile Creek is within the home watershed of a known local population of bull trout. Fourteenmile Creek has not been extensively surveyed for bull trout, and is identified as supporting probable spawning (WDFW et al. 1997).	Fourteenmile Creek provides essential habitat used for spawning and rearing in the Upper White Chuck River local population. It is essential for maintaining distribution, abundance, and productivity.	1212211 481404
Puget Sound—Lower Skagit River	Downey Creek	WA	One of the key spawning area indices for the Lower Skagit (Downen 2009).	Downey Creek provides essential habitat used for spawning and rearing in the Downey Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1212235 482585
Puget Sound—Lower Skagit River	Pumice Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	Pumice Creek provides essential habitat used for spawning and rearing in the Upper White Chuck River local population. It is essential for maintaining distribution, abundance, and productivity.	1212347 481481

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	Fire Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	Fire Creek provides essential habitat used for spawning and rearing in the Upper White Chuck River local population. It is essential for maintaining distribution, abundance, and productivity.	1212435 481532
Puget Sound—Lower Skagit River	Newhalem Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002). Pre-spawning adult bull trout have been reported staging in the lower reaches (Kraemer, in litt. 2003b).	Newhalem Creek provides essential habitat used for spawning and rearing in the Newhalem Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1212540 486713
Puget Sound—Lower Skagit River	Sibley Creek	WA	Currently accessible to foraging bull trout. It is a productive salmon stream, likely important for seasonal foraging by migratory bull trout, and may provide some post-dispersal rearing habitat.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. Lower reaches of this stream likely provide important post-dispersal rearing habitat due to its close proximity to known spawning and rearing streams or reaches.	1212609 485112
Puget Sound—Lower Skagit River	Goodell Creek	WA	One of the key spawning area indices for the Lower Skagit (Downen 2009).	Goodell Creek provides essential habitat used for spawning and rearing in the Goodell Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1212636 486723
Puget Sound—Lower Skagit River	Marble Creek	WA	Part of current distribution (WDFW 2002). Accessible foraging habitat important for migratory bull trout, and may provide some post-dispersal rearing habitat.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. Lower reaches of this stream likely provide important post-dispersal rearing habitat due to its close proximity to known spawning and rearing streams or reaches.	1212807 485310
Puget Sound—Lower Skagit River	Horse Creek	WA	Part of current SR distribution (WDFW 2002). Horse Creek is within the home watershed of a known local population of bull trout. Horse Creek has not been extensively surveyed for bull trout.	Horse Creek provides essential habitat used for spawning and rearing in the Buck Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1212850 483133
Puget Sound—Lower Skagit River	Camp Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	Camp Creek provides essential habitat used for spawning and rearing in the Lower White Chuck River local population. It is essential for maintaining distribution, abundance, and productivity.	1212911 481588
Puget Sound—Lower Skagit River	Lime Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002). Resident fish primarily exist above RM 0.5.	Lime Creek provides essential habitat used for spawning and rearing in the local population. It is essential for maintaining distribution, abundance, and productivity.	1212919 482521

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	Owl Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	Owl Creek provides essential habitat used for spawning and rearing in the Lower White Chuck River local population. It is essential for maintaining distribution, abundance, and productivity.	1212993 481635
Puget Sound—Lower Skagit River	Pugh Creek	WA	Part of current SR distribution (WDFW 2002).	Pugh Creek provides essential habitat used for spawning and rearing in the Lower White Chuck River local population. It is essential for maintaining distribution, abundance, and productivity.	1213377 481722
Puget Sound—Lower Skagit River	Buck Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	Buck Creek provides essential habitat used for spawning and rearing in the Buck Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1213384 482646
Puget Sound—Lower Skagit River	Alma Creek	WA	Part of current distribution (WDFW 2002). It is a productive salmon stream, and important for seasonal foraging by migratory subadult and juvenile bull trout (Kraemer, in litt. 2003c).	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout.	1213613 486004
Puget Sound—Lower Skagit River	Crystal Creek	WA	Part of current SR distribution (WDFW 2002).	Crystal Creek provides essential habitat used for spawning and rearing in the Lower White Chuck River local population. It is essential for maintaining distribution, abundance, and productivity.	1213632 481811
Puget Sound—Lower Skagit River	Boulder Creek	WA	Part of current distribution (WDFW 2002). Accessible foraging habitat important for migratory bull trout, and may provide some post-dispersal rearing habitat.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. Lower reaches of this stream likely provide important post-dispersal rearing habitat due to its close proximity to known spawning and rearing streams or reaches. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1213646 485177
Puget Sound—Lower Skagit River	Otter Creek	WA	Part of current rearing distribution (WDFW 2002). Otter Creek has not been extensively surveyed for bull trout. Otter Creek is within the home watershed of a known local population of bull trout.	Otter Creek provides essential habitat used for rearing in the Illabot Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1213733 484206
Puget Sound—Lower Skagit River	North Fork Sauk River	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	North Fork Sauk provides essential habitat used for spawning and rearing in the Forks of Sauk River local population. It is essential for maintaining distribution, abundance, and productivity.	1213879 480968

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	South Fork Sauk River	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002). One of the key spawning area indices for the Lower Skagit (Downen 2009).	This segment of the South Fork Sauk River provides essential spawning and rearing habitat for fluvial and anadromous forms in the Upper South Fork Sauk River local population. It is essential for maintaining abundance and productivity and maintaining connectivity between SR habitats and freshwater and marine FMO habitat.	1213879 480978.2
Puget Sound—Lower Skagit River	Merry Brook Creek	WA	Part of current SR distribution (WDFW 2002; Kraemer, in litt 2001). Merry Brook Creek has not been extensively surveyed for bull trout.	Merry Brook Creek provides essential habitat used for spawning and rearing in the Forks of the Sauk River local population. It is essential for maintaining distribution, abundance, and productivity.	1213910 480889
Puget Sound—Lower Skagit River	Martin Creek	WA	Currently accessible to SR bull trout (Kraemer, in litt. 2003d). Martin Creek is within the home watershed of a known local population (Upper South Fork Sauk River) of bull trout. Low gradient and presumed to provide good juvenile rearing habitat. Martin Creek has not been extensively surveyed for bull trout. It is a productive salmon stream.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1213918 481008
Puget Sound—Lower Skagit River	Seventysix Gulch	WA	Part of current spawning distribution (WDFW et al. 1997). Seventysix Gulch has not been extensively surveyed for bull trout. Seventysix Gulch is within the home watershed of a known local population of bull trout.	Seventysix Gulch provides essential habitat used for spawning and rearing in the Upper South Fork Sauk River local population. It is essential for maintaining distribution, abundance, and productivity.	1213921 479865
Puget Sound—Lower Skagit River	Glacier Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	Glacier Creek provides essential habitat used for spawning and rearing in the Upper South Fork Sauk River local population. It is essential for maintaining distribution, abundance, and productivity.	1213921 479875
Puget Sound—Lower Skagit River	Bacon Creek	WA	One of the key spawning area indices for the Lower Skagit (Downen 2009).	Bacon Creek provides essential habitat used for spawning and rearing in the Bacon Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1213936 485856
Puget Sound—Lower Skagit River	Bedal Creek	WA	Part of current SR distribution (WDFW 1998; WDFW 2002). Bedal Creek has not been extensively surveyed for bull trout.	Bedal Creek provides essential habitat used for spawning and rearing in the Forks of the Sauk River local population. It is essential for maintaining distribution, abundance, and productivity.	1213939 480797
Puget Sound—Lower Skagit River	Arrow Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002). Arrow Creek has not been extensively surveyed for bull trout. Arrow Creek is within the home watershed of a known local population of bull trout.	Arrow Creek provides essential habitat used for spawning and rearing in the Illabot Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1213946 484233

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	Straight Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	Straight Creek provides essential habitat used for spawning and rearing in the Straight Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1213972 482724
Puget Sound—Lower Skagit River	Chocwick Creek	WA	Bull trout fry have been documented in this stream (Kraemer, in litt. 2003d). WDFW et al. (1997) identified this stream as supporting probable spawning.	Cochwich Creek provides essential habitat used for spawning and rearing in the Forks of the Sauk River local population. It is essential for maintaining distribution, abundance, and productivity.	1213986 480739
Puget Sound—Lower Skagit River	Black Creek	WA	Part of current SR distribution (WDFW 2002). Black Creek is within the home watershed of a known local population of bull trout. Black Creek has not been extensively surveyed for bull trout.	Black Creek provides essential habitat used for spawning and rearing in the Straight Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1214011 482593
Puget Sound—Lower Skagit River	Diobsud Creek	WA	Two adult bull trout observed in about September 1991 (Castle, pers. comm. 2003). Identified as part of current distribution (WDFW 2002). It is a productive salmon stream providing foraging habitat important for migratory bull trout, and may provide some post dispersal rearing habitat.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1214111 485590
Puget Sound—Lower Skagit River	Elliott Creek	WA	Part of current rearing distribution (WDFW 2002; Kraemer, in litt 2001). Elliott Creek has not been extensively surveyed for bull trout. Elliott Creek is within the home watershed of a known local population of bull trout. WDFW et al. (1997) identified this stream as supporting probable spawning.	Elliot Creek provides essential habitat used for spawning and rearing in the Forks of the Sauk River local population. It is essential for maintaining distribution, abundance, and productivity.	1214145 480567
Puget Sound—Lower Skagit River	Jordan Creek	WA	Part of current distribution (WDFW 2002). Accessible foraging habitat important for migratory bull trout, and may provide some post-dispersal rearing habitat.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. Lower reaches of this stream likely provide important post-dispersal rearing habitat due to its close proximity to known spawning and rearing streams or reaches. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1214210 485219
Puget Sound—Lower Skagit River	Unnamed trib. (#1119)	WA	Part of current SR distribution (WDFW 2002).	This unnamed creek (#1119) provides essential habitat used for spawning and rearing in the Lower White Chuck River local population. It is essential for maintaining distribution, abundance, and productivity.	1214291 481813

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	Cascade River	WA	Part of current distribution (WDFW 2002). Mainstem corridor maintains connectivity of two local populations.	This segment of the Cascade River provides essential rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1214292 485242.1
Puget Sound—Lower Skagit River	Cascade River	WA	Part of current SR distribution (WDFW 2002).	This segment of the Cascade River provides essential spawning and rearing habitat for fluvial and anadromous forms in the Cascade River local population. It is essential for maintaining abundance and productivity and maintaining connectivity between SR habitats and freshwater and marine FMO habitat.	1214292 485242.2
Puget Sound—Lower Skagit River	East Fork Bacon Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	East Fork Bacon Creek provides essential habitat used for spawning and rearing in the Bacon Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1214331 486612
Puget Sound—Lower Skagit River	Falls Creek	WA	Part of current rearing distribution (WDFW 2002).	Falls Creek provides essential habitat used for rearing in the Forks of Sauk River local population. It is essential for maintaining distribution, abundance, and productivity.	1214361 481484
Puget Sound—Lower Skagit River	Weden Creek	WA	Part of current rearing distribution (WDFW 2002). Weden Creek has not been extensively surveyed for bull trout. Weden Creek is within the home watershed of a known local population of bull trout, and has been identified as supporting probable spawning (WDFW et al. 1997).	Weden Creek provides essential habitat used for spawning and rearing in the Upper South Fork Sauk River local population. It is essential for maintaining distribution, abundance, and productivity.	1214382 480031
Puget Sound—Lower Skagit River	Tenas Creek	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	Tenas Creek provides essential habitat used for spawning and rearing in the Tenas Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1214384 483237
Puget Sound—Lower Skagit River	Black Oak Creek	WA	Part of current rearing distribution (WDFW 2002).	Black Oak Creek provides essential habitat used for spawning and rearing in the Lower White Chuck River local population. It is essential for maintaining distribution, abundance, and productivity.	1214488 481769

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	Big Creek	WA	Part of current distribution (WDFW 2002). Accessible foraging habitat important for migratory bull trout, and may provide some post-dispersal rearing habitat.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. Lower reaches of this stream likely provide post dispersal rearing habitat due to its close proximity to known spawning and rearing streams or reaches. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1214499 483453
Puget Sound—Lower Skagit River	Pass Creek	WA	Part of current SR distribution (WDFW 2002). Juvenile bull trout identified during electrofishing surveys in 1992 and 2006 (R2 Resource Consultants 2003; Small et al. 2008).	Pass Creek provides essential habitat used for spawning and rearing in the Baker Lake local population. It is essential for maintaining distribution, abundance, and productivity.	1214570 488109
Puget Sound—Lower Skagit River	Bald Eagle Creek	WA	Part of current SR distribution (WDFW 2002). Bull trout observed at base of falls in 2001 (R2 Resource Consultants 2003), and juveniles collected in 2006 (Small et al. 2008).	Bald Eagle Creek provides essential habitat used for spawning and rearing in the Baker Lake local population. It is essential for maintaining distribution, abundance, and productivity.	1214641 488002
Puget Sound—Lower Skagit River	White Chuck River	WA	Part of current SR distribution (WDFW 2002). Mainstem corridor maintains connectivity of the Upper White Chuck River local population.	This segment of the White Chuck River provides essential spawning and rearing habitat for fluvial and anadromous forms in the Lower White Chuck River local population. It is essential for maintaining abundance and productivity and maintaining connectivity between SR habitats and freshwater and marine FMO habitat.	1214713 481729
Puget Sound—Lower Skagit River	Corkindale Creek	WA	Part of current distribution (WDFW 2002). Accessible foraging habitat important for migratory bull trout, and may provide some post dispersal rearing habitat.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1214845 485046
Puget Sound—Lower Skagit River	Rocky Creek	WA	Part of current distribution (WDFW 2002). It is a productive salmon stream important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1214938 485006

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	Crystal Creek	WA	Part of current SR distribution (WDFW 2002).	Crystal Creek provides essential habitat used for spawning and rearing in the Baker Lake local population. It is essential for maintaining distribution, abundance, and productivity.	1215013 487871
Puget Sound—Lower Skagit River	Illabot Creek	WA	One of the key spawning area indices for the Lower Skagit (Downen 2009).	Illabot Creek provides essential habitat used for spawning and rearing in the Illabot Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1215300 484962
Puget Sound—Lower Skagit River	Illabot Creek	WA	One of the key spawning area indices for the Lower Skagit (Downen 2009).	Illabot Creek provides essential habitat used for spawning and rearing in the Illabot Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1215300 484962
Puget Sound—Lower Skagit River	Sulphide Creek	WA	Part of current SR distribution (WDFW 2002). Two adults observed at confluence, and one in the creek, in 2001 (R2 Resource Consultants 2003).	Sulphide Creek provides essential habitat used for spawning and rearing in the Baker Lake local population. It is essential for maintaining distribution, abundance, and productivity.	1215317 487773
Puget Sound—Lower Skagit River	Lake Creek	WA	Part of current SR distribution (WDFW 2002).	Lake Creek provides essential habitat used for spawning and rearing in the Baker Lake local population. It is essential for maintaining distribution, abundance, and productivity.	1215447 487623
Puget Sound—Lower Skagit River	Suiattle River	WA	Part of current distribution (WDFW 2002). Mainstem corridor maintains connectivity of eight local populations.	This segment of the Suaittle River provides essential rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1215477 483300.1
Puget Sound—Lower Skagit River	Dan Creek	WA	Part of current distribution (WDFW 2002). Accessible foraging habitat important for migratory bull trout, and may provide some post-dispersal rearing habitat.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. Lower reaches of this stream likely provide important post-dispersal rearing habitat due to its close proximity to known spawning and rearing streams or reaches. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1215499 482979

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	White Creek	WA	Currently accessible to foraging bull trout. It is a productive salmon stream, and likely important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1215515 483976
Puget Sound—Lower Skagit River	Sauk River	WA	Part of current distribution (WDFW 2002).	This segment of the Sauk River provides essential rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1216038 484817.1
Puget Sound—Lower Skagit River	Sauk River	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002).	This segment of the Sauk River provides essential spawning and rearing habitat for fluvial and anadromous forms in the Forks of the Sauk River local population. It is essential for maintaining abundance and productivity and maintaining connectivity between SR habitats and freshwater and marine FMO habitat.	1216038 484817.2
Puget Sound—Lower Skagit River	Swift Creek	WA	Numerous juveniles caught below natural barrier (S. Zyskowski, pers. com., 2003a).	Swift Creek provides essential habitat used for spawning and rearing in the Baker Lake local population. It is essential for maintaining distribution, abundance, and productivity.	1216483 487256
Puget Sound—Lower Skagit River	Sulphur Creek (Lake Shannon)	WA	Determined to be a local population in 2005, based on additional survey effort (R2 Resource Consultants and PSE 2006). Recent genetic information indicates this population is distinguishable from the upper Baker River local population (Small et al. 2008).	Sulphur Creek provides essential habitat used for spawning and rearing in the Sulphur Creek local population. It is essential for maintaining distribution, abundance, and productivity. One of only 2 local populations in the Baker River system.	1216981 486482
Puget Sound—Lower Skagit River	Jackman Creek	WA	Part of current distribution (WDFW 2002). It is a productive salmon stream important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1217204 485229

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	Baker River	WA	Part of current SR distribution (WDFW 2002). Juvenile and adult bull trout consistently observed in this reach. Staging and/or spawning adults have been observed near the area of Bald Eagle Creek (WDFW et al. 1997) and Sulphide Creek (R2 Resource Consultants 2003).	Baker River provides essential habitat used for spawning and rearing, and potentially foraging and overwintering in the Baker Lake local population. It is essential for maintaining distribution, abundance, and productivity. This segment of the Baker River is essential for directly maintaining connectivity between SR habitats and lake and marine FMO habitat.	1217353 485339.2
Puget Sound—Lower Skagit River	Finney Creek	WA	Part of current distribution (WDFW 2002). It is a productive salmon stream important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout.	1218455 485240
Puget Sound—Lower Skagit River	Pressentin Creek	WA	Currently accessible to foraging bull trout. It is a productive salmon stream, and likely important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1218509 485182
Puget Sound—Lower Skagit River	Grandy Creek	WA	Part of current distribution (WDFW 2002). It is a productive salmon stream important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1218793 485183
Puget Sound—Lower Skagit River	Mill Creek	WA	Currently accessible to foraging bull trout. It is a productive salmon stream, and likely important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1218863 485124
Puget Sound—Lower Skagit River	O'Toole Creek	WA	Currently accessible to foraging bull trout. It is a productive salmon stream, and likely important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1219162 485137

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	Alder Creek	WA	Part of current distribution (WDFW 2002). It is a productive salmon stream important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1219543 485193
Puget Sound—Lower Skagit River	Cumberland Creek	WA	Currently accessible to foraging bull trout. It is a productive salmon stream, and likely important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1219923 485180
Puget Sound—Lower Skagit River	Jones Creek	WA	Subadult captured during electrofishing in September 1992 (WDFW et al. 1997). It is a productive salmon stream important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1220520 485238
Puget Sound—Lower Skagit River	Day Creek	WA	Currently accessible to foraging bull trout. It is a productive salmon stream, and likely important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1220653 485192
Puget Sound—Lower Skagit River	Wiseman Creek	WA	Currently accessible to foraging bull trout. It is a productive salmon stream, and likely important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1221337 485066

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	Gilligan Creek	WA	Currently accessible to foraging bull trout. It is a productive salmon stream, and likely important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1221350 484872
Puget Sound—Lower Skagit River	Nookachamps Creek	WA	Part of current distribution (WDFW 2002). It is a productive salmon stream important for seasonal foraging by migratory bull trout. Subadult bull trout was captured by WDFW in the tributary, Lake Creek, approximately one mile above Big Lake in summer of 1994 (BrennanDubbs, in litt. 2005).	The draft recovery chapter explicitly identifies as essential and biologically important, accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1222956 484712
Puget Sound—Lower Skagit River	Skagit River	WA	Part of current distribution (WDFW 2002). Multiple age classes observed throughout reach (WDFW et al. 1997, 1998).	This segment of the Skagit River provides essential rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1223661 483874.2
Puget Sound—Lower Skagit River	South Fork Skagit River	WA	Adults and subadults are consistently observed and captured in this reach (WDFW 1998).	This segment of the Skagit River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1223669 482919
Puget Sound—Lower Skagit River	North Fork Skagit River	WA	Adults and subadults are consistently observed and captured in this reach (WDFW 1998).	This segment of the Skagit River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1224718 483640
Puget Sound—Lower Skagit River	Swinomish Channel	WA	See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-01

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	South Fork Skagit River (Tom Moore Slough)	WA	Adults and subadults are consistently observed and captured in this reach (WDFW 1998).	This segment of the Skagit River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1223669 482919
Puget Sound—Lower Skagit River	South Fork Skagit River (Freshwater Slough)	WA	Adults and subadults are consistently observed and captured in this reach (WDFW 1998).	This segment of the Skagit River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1223669 482919
Puget Sound—Lower Skagit River	Skagit River	WA	Adults and subadults are consistently observed and captured in this reach (WDFW 1998).	This segment of the Skagit River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1223661 483874.1
Puget Sound—Lower Skagit River	Baker River	WA	Part of current distribution (WDFW 2002). Bull trout are captured each year and transported above the dams to Baker Lake (WDFW 1998). It is a productive salmon stream important for seasonal foraging by migratory bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is essential to maintaining connectivity between the Baker Lake local population and the rest of the core area and marine foraging habitats).	1217353 485339.1
Puget Sound—Lower Skagit River	Suiattle River	WA	Part of current SR distribution (WDFW 2002).	This segment of the Suaittle River provides essential spawning and rearing habitat for fluvial and anadromous forms in the Upper Suaittle River local population. It is essential for maintaining distribution, abundance and productivity and maintaining connectivity between SR habitats and freshwater and marine FMO habitat.	1215477 483300.2
Puget Sound—Lower Skagit River	Suiattle River	WA	Part of current distribution (WDFW 2002). Mainstem corridor maintains connectivity of eight local populations.	This segment of the Suaittle River provides essential rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1215477 483300.1

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	White Chuck River	WA	Part of current SR distribution (WDFW 2002).	This segment of the White Chuck River provides essential spawning and rearing habitat for fluvial and anadromous forms in the Upper White Chuck River local population. It is essential for maintaining abundance and productivity and maintaining connectivity between SR habitats and freshwater and marine FMO habitat.	1214713 481729.2
Puget Sound—Lower Skagit River	South Fork Sauk River	WA	Part of current SR distribution (WDFW et al. 1997; WDFW 2002). Mainstem corridor maintains connectivity of the Upper South Fork Sauk River local population.	This segment of the South Fork Sauk River provides essential spawning and rearing habitat for fluvial and anadromous forms in the Forks of the Sauk River local population. It is essential for maintaining abundance and productivity and maintaining connectivity between SR habitats and freshwater and marine FMO habitat.	1213879 480978.1
Puget Sound—Lower Skagit River	South Fork Skagit River (Steamboat Slough)	WA	Adults and subadults are consistently observed and captured in this reach (WDFW 1998).	This segment of the Skagit River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1223669 482919
Puget Sound—Lower Skagit River	Baker Lake	WA	Part of current distribution (WDFW 2002). Primary foraging and overwintering habitat for Baker Lake local population.	Baker Lake provides essential foraging and overwintering habitat for the Baker Lake local population, and may also provide important rearing habitat. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1216421 487078
Puget Sound—Lower Skagit River	Gorge Lake	WA	Part of current distribution (WDFW 2002). Accessible foraging and overwintering habitat important for the adfluvial bull trout within this section of the Skagit River system. Bull trout are incidentally captured by recreational lake anglers (Connor, in litt. 2003c; Shannon, in litt. 2004).	Gorge Lake provides essential foraging and overwintering habitat for the Stetattle Creek local population and for bull trout entrained from Diablo Reservoir, and may also provide important rearing habitat. Should passage be provided around Gorge Dam, Gorge Lake will be essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine habitat. It is currently essential for indirectly maintaining abundance and productivity.	1211751 487061

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Skagit River	Lake Shannon	WA	Part of current distribution (WDFW 2002). Bull trout have been caught in the lake near the mouths of tributaries (Huddle, pers. com. 2003). Twenty-seven bull trout have been captured and tagged in the lake between 2002-2004 (R2 Resource Consultants and Puget Sound Energy 2005).	Lake Shannon provides the primary foraging and overwintering habitat for the Sulphur Creek local population, and may also provide important rearing habitat. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1217233 485870

2.4. Upper Skagit River Critical Habitat Subunit

The Upper Skagit River CHSU is essential to bull trout conservation because it represents a significant portion of the distribution of bull trout in Puget Sound. Bull trout's sympatric distribution with Dolly Varden suggests this CHSU may represent a key climate change refugium for the species due to Dolly Varden's presumed colder water requirements. Core area habitats are largely within protected areas (North Cascades National Park and Pasayten Wilderness) (see Appendix 1 for more detailed information).

The Upper Skagit River CHSU is located on the upper western slopes of the Cascade Range. The Skagit River system initiates in British Columbia, Canada, and flows southwest into Ross Lake, a transboundary reservoir formed by Ross Dam. Immediately downstream of Ross Dam is Diablo Lake, a reservoir formed behind Diablo Dam. These reservoirs provide FMO habitat for adfluvial populations. A number of smaller tributaries feed into Ross Lake providing the spawning and rearing habitat for that portion of the population within the United States, whereas the upper Skagit River and its tributaries provide the spawning and rearing habitat in Canada. The Upper Skagit River CHSU includes Diablo Lake and its tributaries and only those portions of Ross Lake and its associated tributaries within the United States. The following water bodies are included in this CHSU (see Table 14):

(A) Diablo Lake (325.0 ha (803.1 ac)) and Ross Lake (4,643.0 ha (11,473.1 ac)) provide FMO habitat for adfluvial bull trout in the Upper Skagit River core area. Deer Creek from Diablo Lake upstream 1.0 km (0.6 mi) to a gradient change is anticipated to provide spawning and rearing habitat for the potential local population established in Deer Creek. Bull trout were observed spawning in this stream in 1976 (Glesne, in litt. 1993, p. 1). Roland Creek from Ross Lake upstream 2.4 km (1.5 mi) to a gradient barrier provides additional foraging and subadult rearing habitat; Pierce Creek from Ross Lake upstream 1.0 km (0.6 mi) to a natural barrier provides spawning and rearing habitat for the Pierce Creek local population; and Devil Creek from Ross Lake upstream 2.4 km (1.5 mi) to a natural barrier provides additional foraging and subadult rearing habitat. Big Beaver Creek from Ross Lake upstream 17.9 km (11.1 mi) to its confluence with Luna Creek (location of gradient barrier) and its tributary McMillan Creek upstream 1.6 km (1.0 mi) to gradient barrier; Little Beaver Creek from Ross Lake upstream approximately 20.8 km (12.9 mi) to a gradient barrier just upstream of its confluence with Pass Creek; and Silver Creek from Ross Lake upstream approximately 7.1 km (4.4 mi) to a gradient barrier all provide spawning and rearing habitat for the Big Beaver Creek, Little Beaver Creek, and Silver Creek , respectively.

(B) Thunder Creek from Diablo Lake upstream approximately 15.9 km (9.9 mi) to its confluence with West Fork Thunder Creek and its tributaries—McAllister Creek upstream 9.6 km (6.0 mi) and Fisher Creek upstream 12.2 (7.6 mi) to presumed gradient barriers—provides spawning and rearing habitat for the Thunder Creek local population.

(C) Ruby Creek from Ross Lake upstream 6.8 km (4.2 mi) to its confluence with Granite and Canyon Creeks, and its tributary Granite Creek upstream 8.5 km (5.3 mi) to a gradient barrier provide spawning and rearing habitat for the local population. Panther Creek upstream approximately 11.3 km (7.0 mi) to its confluence with Gabriel Creek (location of gradient barrier) provides spawning and rearing habitat for the Ruby Creek local population.

(D) Canyon Creek upstream 14.5 km (9.0 mi) to a gradient barrier located approximately 1.6 km (1.0 mi) above its confluence with North Fork Canyon Creek and its tributaries—Slate Creek

upstream 1.0 km (0.6 mi) and North Fork Canyon Creek upstream 0.8 km (0.5 mi) to gradient barriers—provide spawning and rearing habitat for the Ruby Creek local population.

(E) Lightning Creek from Ross Lake upstream 17.7 km (11.0 mi) to the U.S.–Canadian border and its tributaries—Three Fools Creek upstream 10.1 km (6.3 mi) to its confluence with Castle Creek and Trouble Creek forks (location of a gradient barrier); Three Fools Creek's tributary, Cinnamon Creek, upstream 3.0 km (2.0 mi) to presumed gradient barrier; and Freezeout Creek upstream 3.0 km (2.0 mi) to presumed gradient barrier—provide spawning and rearing habitat for the Lightning Creek local population.

Table 14. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Upper Skagit River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Upper Skagit River	North Fork Canyon Creek	WA	Juvenile and subadult bull trout observed during snorkel surveys in 2001 (USFS 2002c). Prespawning adult bull trout have been observed in Canyon Creek approximately 500 feet below the confluence with the North Fork (USFS 2002c). NF Canyon Creek is within the Pasayten Wilderness, so habitat is essentially in pristine condition.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1207915 487680
Puget Sound—Upper Skagit River	Slate Creek	WA	Part of current rearing distribution (WDFW 2002). Prespawning adults observed near confluence with Slate Creek (USFS, in litt. 1997; Hopkins, pers. comm. 2002). No bull trout observed above waterfall at RM 0.6 during limited snorkel surveys (USFS, in litt. 2010a).	Slate Creek provides essential habitat used for spawning and rearing in the Ruby Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1207946 487571
Puget Sound—Upper Skagit River	Cinnamon Creek	WA	Connected to known occupied stream (Three Fools Creek). Cinnamon Creek is within the home watershed of a known local population (Lightning Creek) of bull trout. This creek has not been extensively surveyed for bull trout. Cinnamon Creek is within the Pasayten Wilderness, so habitat is essentially in pristine condition.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1209144 488915
Puget Sound—Upper Skagit River	Canyon Creek	WA	Part of current rearing distribution (WDFW 2002). Prespawning adults observed above confluence with Slate Creek (Hopkins, pers. comm. 2002), and below confluence with North Fork Canyon Creek (USFS in litt. 2002c). Canyon Creek has not been extensively surveyed for bull trout.	Canyon Creek provides essential habitat used for spawning and rearing in the Ruby Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1209164 487070
Puget Sound—Upper Skagit River	Granite Creek	WA	Part of current rearing distribution (WDFW 2002). Juveniles observed during snorkel and electrofishing surveys (USFS 1998c; Molesworth, pers. comm., 2002). No bull trout observed above waterfall at RM 5.3 (USFS, in litt. 2010a).	Granite Creek provides essential habitat used for spawning and rearing in the Ruby Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1209164 487080

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Upper Skagit River	Freezeout Creek	WA	Connected to known occupied stream (Lightning Creek). Freezeout Creek is within the home watershed of a known local population (Lightning Creek) of bull trout. This creek has not been extensively surveyed for bull trout. Freezeout Creek is within the Pasayten Wilderness, so habitat is essentially in pristine condition.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1209690 489565
Puget Sound—Upper Skagit River	Three Fools Creek	WA	Part of current rearing distribution (WDFW 2002). High densities of juveniles observed in upper reaches (Hopkins, pers. comm. 2002).	Three Fools Creek provides essential habitat used for spawning and rearing in the Lightning Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1209730 488905
Puget Sound—Upper Skagit River	Panther Creek	WA	Part of current rearing distribution (WDFW 2002). Panther Creek has not been extensively surveyed for bull trout.	Panther Creek provides essential habitat used for spawning and rearing in the Ruby Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1209748 487079
Puget Sound—Upper Skagit River	Lightning Creek	WA	Part of current rearing distribution (WDFW 2002). Spawning adfluvial bull observed in lower 2 miles, and high densities of juveniles observed in upper reaches (USFS, in litt. 2002c).	Previously identified as one of the primary spawning streams for bull trout in the Ross Lake system (Johnston 1989). Lightning Creek provides essential habitat used for spawning and rearing in the Lightning Creek local population. It is essential for maintaining distribution, abundance, and productivity. Lightning Creek provides essential habitat used for spawning and rearing in the Lightning Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1210269 488709
Puget Sound—Upper Skagit River	Roland Creek	WA	Currently accessible to adfluvial bull trout. Stream hasn't been extensively surveyed for bull trout, but habitat similar to other bull trout tributaries to Ross Lake. A single subadult bull trout observed in 2002 during rainbow trout broodstock collection efforts (Connor, in litt. 2003d). This is a productive spawning stream for adfluvial population of rainbow trout, which are believed to be the primary forage fish for bull trout in the upper Skagit River system (Connor *in litt.* 2003b).	The draft recovery chapter identifies these accessible tributary streams as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area. Roland Creek likely provides essential habitat used for subadult rearing.	1210271 487618

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Upper Skagit River	Devils Creek	WA	Juveniles/subadults observed at the mouth (Connor *in litt.* 2003a).	The draft recovery chapter identifies these accessible tributary streams as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area. Devils Creek provides essential habitat used for subadult rearing.	1210422 488253
Puget Sound—Upper Skagit River	Big Beaver Creek	WA	Part of current SR distribution (WDFW 2002). Previously identified as one of the primary spawning streams for bull trout in the Ross Lake system (Johnston 1989). Adult adfluvial bull trout observed staging in this system.	Big Beaver Creek provides essential habitat used for spawning and rearing in the Big Beaver Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1210446 487725
Puget Sound—Upper Skagit River	Ruby Creek	WA	Part of current SR distribution (WDFW 2002; Connor *in litt.* 2003a). Ruby Creek drainage was previously identified as one of the primary spawning areas for bull trout in the Ross Lake system (Johnston 1989). Adfluvial adults observed during snorkel surveys conducted in 2000 (USFS, in litt 2000b).	Ruby Creek provides essential habitat used for spawning and rearing in the Ruby Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1210461 487369
Puget Sound—Upper Skagit River	Fisher Creek	WA	Connected to known occupied stream (Thunder Creek). Fisher Creek is within the home watershed of a known local population of bull trout. This creek has not been extensively surveyed for bull trout. Fisher Creek is within the North Cascades National Park, so habitat is essentially in pristine condition.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1210492 486030
Puget Sound—Upper Skagit River	McAllister Creek	WA	Connected to known occupied stream (Thunder Creek). McAllister Creek is within the home watershed of a known local population of bull trout. This creek has not been extensively surveyed for bull trout. McAllister Creek is within the North Cascades National Park, so habitat is essentially in pristine condition.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1210554 486229
Puget Sound—Upper Skagit River	Pierce Creek	WA	Young of year bull trout observed during snorkeling surveys in 1999 (Connor *in litt.* 2003a).	Pierce Creek provides essential habitat used for spawning and rearing in the Pierce Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1210597 487735
Puget Sound—Upper Skagit River	Little Beaver Creek	WA	Part of current rearing distribution (WDFW 2002). Adult adfluvial bull trout observed staging in this system.	Little Beaver Creek provides essential habitat used for spawning and rearing in the Little Beaver Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1210637 489118

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Upper Skagit River	Silver Creek	WA	Part of current rearing distribution (WDFW 2002). Adult adfluvial bull trout observed staging in this system.	Silver Creek provides essential habitat used for spawning and rearing in the Silver Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1210920 489719
Puget Sound—Upper Skagit River	Thunder Creek	WA	Part of current SR distribution (WDFW 2002; S. Zyskowski, in litt. 2002; Connor *in litt.* 2003a).	Thunder Creek provides essential habitat used for spawning and rearing in the Thunder Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1211054 487115
Puget Sound—Upper Skagit River	Deer Creek	WA	Spawning native char observed in 1976 (Glesne, in litt. 1993). Deer Creek has not been extensively surveyed for bull trout. Only other potential independent spawning tributary to Diablo Lake.	Deer Creek would provide essential habitat used for spawning and rearing in the Deer Creek potential local population, if it were successfully reestablished. It would be essential for its contribution to distribution, abundance, and productivity of bull trout within the core area, especially the Diablo Lake system.	1211154 487118
Puget Sound—Upper Skagit River	McMillan Creek	WA	Connected to known occupied stream (Big Beaver Creek). McMillan Creek is within the home watershed of a known local population (Big Beaver Creek) of bull trout. This creek has not been extensively surveyed for bull trout. McMillan Creek is within the North Cascades National Park, so habitat is essentially in pristine condition.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1211917 488146
Puget Sound—Upper Skagit River	Diablo Lake	WA	Primary foraging and overwintering habitat for Thunder Creek local population. Large char frequently caught by anglers (Downen, pers. comm. 2002; Zyskowski, in litt. 2003).	Diablo Lake provides essential foraging and overwintering habitat for the Thunder Creek local population and Deer Creek potential local population, and may also provide important rearing habitat. It is essential for maintaining abundance and productivity, and connectivity among local populations.	1211050 487077
Puget Sound—Upper Skagit River	Ross Lake	WA	Primary foraging and overwintering habitat for all local populations connected to Ross lake in U.S. and British Columbia. Adults recently collected for U.S./Canada cooperative telemetry project (Jesson et al., in litt 2002). It is a productive reservoir supporting abundant adfluvial rainbow trout population, as well as smaller populations of whitefish and cutthroat trout (Connor *in litt.* 2003b).	Ross Lake provides essential foraging and overwintering habitat for 14 (7 in U.S. and 7 in British Columbia) local populations, and may also provide important rearing habitat, within the Upper Skagit core area. It is essential for maintaining abundance and productivity.	1210536 488685

2.5. Stillaguamish River Critical Habitat Subunit

The Stillaguamish River CHSU is essential to bull trout conservation because it represents part of the core distribution of amphidromous bull trout in Puget Sound. Bull trout's sympatric distribution with Dolly Varden suggests this CHSU may represent a key climate change refugium for the species due to Dolly Varden's presumed colder water requirements. A small section of the river's headwaters is within a protected area (Boulder River Wilderness) (see Appendix 1 for more detailed information).

The Stillaguamish River CHSU is located on the western slopes of the Cascade Range and includes the mainstem Stillaguamish River; its two major forks, the North and South Forks; and their associated tributaries. The Stillaguamish River system flows west from the Cascade Mountain Range towards Puget Sound, discharging into Port Susan Bay at the north end of Camano Island. A total of approximately 362.0 km (224.9 mi) of stream is designated as critical habitat. The following water bodies are included in this CHSU (see Table 15):

(A) The Stillaguamish River from its mouth at Puget Sound (including the South (1.8 km (1.1 mi)) and West (1.9 km (1.2 mi)) Passes) upstream approximately 35.8 km (22.9 mi) through Hat Slough (3.9 km (2.4 mi)) to its confluence with the North Fork Stillaguamish River and South Fork Stillaguamish River and its associated sloughs (South Slough and Cook Slough) and its tributary, Pilchuck Creek, upstream 17.7 km (11.0 mi) to a natural barrier provide foraging and overwintering habitat and an essential migratory corridor for amphidromous bull trout.

(B) North Fork Stillaguamish River from its confluence with the South Fork Stillaguamish River upstream approximately 60.7 km (37.7 mi) to a natural barrier provide rearing, foraging, and overwintering habitat for the North Fork Stillaguamish River local population downstream from Boulder River and spawning and rearing habitat for that population upstream of Boulder River. The North Fork Stillaguamish River also provides an essential migratory corridor for amphidromous bull trout. Brooks Creek from its mouth upstream 1.6 km (1.0 mi) and Rollins Creek from its mouth upstream 1.9 km (1.2 mi) to natural barriers provide primary accessible tributary FMO habitat in the North Fork Stillaguamish River. Boulder River upstream 8.2 km (5.1 mi) to a natural barrier provides spawning and rearing habitat for the North Fork Stillaguamish River local population. The following tributaries from their mouths or confluence upstream to natural barriers also provide spawning and rearing habitat for the North Fork Stillaguamish River local population: an unnamed tributary (stream catalog number 0241) upstream 1.3 km (0.8 mi); an unnamed tributary (stream catalog number 0242) upstream 0.8 km (0.5 mi); an unnamed tributary (stream catalog number 0243) upstream 2.1 km (1.3 mi); French Creek upstream 4.8 km (3 mi); Segelson Creek upstream 3.2 km (2.0 mi); and Moose Creek upstream 2.9 km (1.8 mi). Squire Creek from its mouth upstream 12.7 km (7.9 mi) provides rearing, foraging, migration habitat, and potentially spawning habitat.

(C) Deer Creek from its confluence with the North Fork Stillaguamish River upstream 30.1 km (18.7 mi) to a natural barrier provides combined spawning, rearing, foraging, and migration habitat for the Deer Creek local population. Little Deer Creek upstream 8.0 km (5.0 mi) and Higgins Creek upstream 7.9 km (4.9 mi) to accessible headwaters provides spawning and rearing habitat for the local population. Bull trout have been documented in Deer Creek and Higgins Creek.

(D) South Fork Stillaguamish River from its confluence with the North Fork Stillaguamish River upstream approximately 80.1 km (49.8 mi) to accessible headwaters provides spawning and

rearing habitat upstream of Wiley Creek and foraging and overwintering habitat downstream of Wiley Creek. It also provides an essential migratory corridor for amphidromous bull trout. Jim Creek upstream 19.6 km (12.2 mi) to Cub Creek provides some FMO habitat outside of local population for the Stillaguamish River core area. The South Fork Stillaguamish River and mouths of listed and unlisted tributaries also provide some post-dispersal rearing habitat. The following tributaries from their mouths upstream to a natural barrier provide spawning and rearing habitat for the local population: Schweitzer Creek upstream 1.1 km (0.7 mi); Long Creek upstream 1.1 km (0.7 mi); Boardman Creek upstream 4.5 km (2.8 mi); Gordon Creek upstream 2.7 km (1.7 mi); Mallardy Creek upstream 1.9 km (1.2 mi); Blackjack Creek upstream 1.3 km (0.8 mi); Bender Creek upstream 0.8 km (0.5 mi); Silver Gulch upstream 0.8 km (0.5 mi); Deer Creek upstream 1.6 km (1.0 mi); Coal Creek upstream 1.6 km (1.0 mi); Beaver Creek upstream 1.6 km (1.0 mi); Big Four Creek upstream 1.1 km (0.7 mi); Perry Creek upstream 2.6 km (1.6 mi); Buck Creek upstream 0.8 km (0.5 mi); and Palmer Creek upstream 1.1 km (0.7 mi).

(E) Canyon Creek from its confluence with the South Fork Stillaguamish River upstream 17.9 km (11.1 mi) to its confluence with the North and South Forks provides FMO habitat below the unnamed tributary (stream catalog number 0365) and spawning and rearing habitat for the South Fork Canyon Creek local population upstream of this unnamed tributary. An unnamed tributary (stream catalog number 0364) from its mouth upstream 1.0 km (0.6 mi) to a natural barrier; an unnamed tributary (stream catalog number 0365) from its mouth upstream 1.0 km (0.6 mi) to a natural barrier; North Fork Canyon Creek from its confluence with the South Fork Stillaguamish River upstream 0.8 km (0.5 mi) to a natural barrier; and South Fork Canyon Creek from its confluence with the North Fork Stillaguamish River upstream 2.6 km (1.6 mi) to a natural barrier just upstream of Saddle Creek all provide spawning and rearing habitat for the local population.

Table 15. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Stillaguamish River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Stillaguamish River	Buck Creek	WA	Part of current SR distribution based on recent surveys (Downen, in litt. 2003).	Buck Creek provides essential habitat used for spawning and rearing in the South Fork Stillaguamish River local population. It is essential for maintaining distribution, abundance, and productivity.	1214802 480450
Puget Sound—Stillaguamish River	Palmer Creek	WA	Part of current SR distribution (WDFW 2002; Downen, in litt. 2003).	Palmer Creek provides essential habitat used for spawning and rearing in the South Fork Stillaguamish River local population. It is essential for maintaining distribution, abundance, and productivity.	1214815 480453
Puget Sound—Stillaguamish River	Perry Creek	WA	Part of current SR distribution based on recent surveys (Downen, in litt. 2003).	Perry Creek provides essential habitat used for spawning and rearing in the South Fork Stillaguamish River local population. It is essential for maintaining distribution, abundance, and productivity.	1215140 480630
Puget Sound—Stillaguamish River	Big Four Creek	WA	Juvenile and subadult bull trout captured during U.S. Forest Service outmigrant trapping efforts in 2002 and 2003 (Chang, in litt. 2003). Big Four Creek is within the home watershed of a known local population (South Fork Stillaguamish River) of bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1215225 480716
Puget Sound—Stillaguamish River	Beaver Creek	WA	Connected to occupied stream (South Fork Stillaguamish River). Beaver Creek is within the home watershed of a known local population (South Fork Stillaguamish River) of bull trout. Beaver Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1215256 480774
Puget Sound—Stillaguamish River	Coal Creek	WA	Connected to occupied stream (South Fork Stillaguamish River). Coal Creek is within the home watershed of a known local population (South Fork Stillaguamish River) of bull trout. Coal Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1215393 480850

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Stillaguamish River	Deer Creek	WA	Connected to occupied stream (South Fork Stillaguamish River). Deer Creek is within the home watershed of a known local population (South Fork Stillaguamish River) of bull trout. Deer Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1215543 480837
Puget Sound—Stillaguamish River	Silver Gulch	WA	Connected to occupied stream (South Fork Stillaguamish River). Silver Gulch is within the home watershed of a known local population (South Fork Stillaguamish River) of bull trout. Silver Gulch has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1215693 480786
Puget Sound—Stillaguamish River	Bender Creek	WA	Connected to occupied stream (South Fork Stillaguamish River). Bender Creek is within the home watershed of a known local population (South Fork Stillaguamish River) of bull trout. Bender Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1215891 480710
Puget Sound—Stillaguamish River	Blackjack Creek	WA	Connected to occupied stream (South Fork Stillaguamish River). Blackjack Creek is within the home watershed of a known local population (South Fork Stillaguamish River) of bull trout. Blackjack Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1216295 480618
Puget Sound—Stillaguamish River	Mallardy Creek	WA	Connected to occupied stream (South Fork Stillaguamish River). Mallardy Creek is within the home watershed of a known local population (South Fork Stillaguamish River) of bull trout. Mallardy Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1216538 480702
Puget Sound—Stillaguamish River	Gordon Creek	WA	Connected to occupied stream (South Fork Stillaguamish River). Gordon Creek is within the home watershed of a known local population (South Fork Stillaguamish River) of bull trout. Gordon Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1216713 480707

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Stillaguamish River	Boardman Creek	WA	Connected to occupied stream (South Fork Stillaguamish River). Boardman Creek is within the home watershed of a known local population (South Fork Stillaguamish River) of bull trout. Boardman Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1216802 480700
Puget Sound—Stillaguamish River	Squire Creek	WA	Adult-sized bull trout observed in the late 1980s (Castle, pers. comm. 2003). Connected to known occupied stream (North Fork Stillaguamish River). Squire Creek is within the home watershed of a known local population (North Fork Stillaguamish River) of bull trout. Squire Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1216838 482795
Puget Sound—Stillaguamish River	Long Creek	WA	Connected to occupied stream (South Fork Stillaguamish River). Long Creek is within the home watershed of a known local population (South Fork Stillaguamish River) of bull trout. Long Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1216899 480737
Puget Sound—Stillaguamish River	Schweitzer Creek	WA	Connected to occupied stream (South Fork Stillaguamish River). Schweitzer Creek is within the home watershed of a known local population (South Fork Stillaguamish River) of bull trout. Schweitzer Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1216979 480741
Puget Sound—Stillaguamish River	Moose Creek	WA	Connected to known occupied stream (North Fork Stillaguamish River). Moose Creek is within the home watershed of a known local population (North Fork Stillaguamish River) of bull trout. Moose Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1216983 482769

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Stillaguamish River	Segelsen Creek	WA	Connected to known occupied stream (North Fork Stillaguamish River). Segelsen Creek is within the home watershed of a known local population (North Fork Stillaguamish River) of bull trout. Segelsen Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1217137 482806
Puget Sound—Stillaguamish River	French Creek	WA	Connected to known occupied stream (North Fork Stillaguamish River). French Creek is within the home watershed of a known local population (North Fork Stillaguamish River) of bull trout. French Creek has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1217553 482825
Puget Sound—Stillaguamish River	Unnamed trib. (#0243)	WA	Connected to known occupied stream (North Fork Stillaguamish River). This unnamed tributary is within the home watershed of a known local population (North Fork Stillaguamish River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1217703 482859
Puget Sound—Stillaguamish River	Unnamed trib. (#0242)	WA	Connected to known occupied stream (North Fork Stillaguamish River). This unnamed tributary is within the home watershed of a known local population (North Fork Stillaguamish River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1217709 482864
Puget Sound—Stillaguamish River	Unnamed trib. (#0241)	WA	Connected to known occupied stream (North Fork Stillaguamish River). This unnamed tributary is within the home watershed of a known local population (North Fork Stillaguamish River) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1217795 482837
Puget Sound—Stillaguamish River	Boulder River	WA	Part of current SR distribution (WDFW 2002). Adult bull trout observed spawning in this system (Service 2004a). No extensive juvenile surveys have been conducted.	Boulder River provides essential habitat used for spawning and rearing in the North Fork Stillaguamish River local population. It is essential for maintaining distribution, abundance, and productivity.	1217856 482824

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Stillaguamish River	Higgins Creek	WA	Juveniles observed in 2000 and 2002 (USFS and NPS, in litt. 2003). Dolly Varden recently discovered upstream of natural barrier (DeHann, in litt. 2009), indicating this stream provides possible temperature refugia habitat for bull trout.	Higgins Creek provides essential habitat used for spawning and rearing in the Upper Deer Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1218062 483622
Puget Sound—Stillaguamish River	North Fork Canyon Creek	WA	Part of current SR distribution (WDFW 2002). No extensive spawning or juvenile surveys have been conducted.	North Fork Canyon Creek provides essential habitat used for spawning and rearing in the Canyon Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1218158 481580
Puget Sound—Stillaguamish River	South Fork Canyon Creek	WA	Part of current SR distribution (WDFW 2002). No extensive spawning or juvenile surveys have been conducted.	South Fork Canyon Creek provides essential habitat used for spawning and rearing in the Canyon Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1218158 481590
Puget Sound—Stillaguamish River	Rollins Creek	WA	Productive salmon stream, and likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout.	1218353 482808
Puget Sound—Stillaguamish River	Little Deer Creek	WA	Connected to known occupied stream (Deer Creek). This is an accessible headwater tributary to the Upper Deer Creek local population of bull trout. Little Deer Creek has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1218683 483868
Puget Sound—Stillaguamish River	Unnamed trib. (#0365)	WA	Connected to occupied stream (Canyon Creek). This unnamed tributary is within the home watershed of a known local population (Canyon Creek) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1218880 481242
Puget Sound—Stillaguamish River	Unnamed trib. (#0364)	WA	Connected to occupied stream (Canyon Creek). This unnamed tributary is within the home watershed of a known local population (Canyon Creek) of bull trout. This unnamed tributary has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219015 481232

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Stillaguamish River	Brooks Creek	WA	Productive salmon stream, and likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout. Accessible post-dispersal rearing habitat downstream of local populations.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1219097 482769
Puget Sound—Stillaguamish River	Deer Creek	WA	Juveniles and spawning adults observed in upstream tributaries to this stream (Downen, in litt. 2003).	Deer Creek provides essential habitat used for spawning and rearing, foraging, and migration in the Upper Deer Creek local population. It is essential for maintaining distribution, abundance, and productivity, and connectivity between SR habitats and freshwater and marine FMO habitat.	1219314 482681
Puget Sound—Stillaguamish River	Deer Creek	WA	Juveniles and spawning adults observed in upstream tributaries to this stream (Downen, in litt. 2003).	Deer Creek provides essential habitat used for spawning and rearing, foraging, and migration in the Upper Deer Creek local population. It is essential for maintaining distribution, abundance, and productivity, and connectivity between SR habitats and freshwater and marine FMO habitat.	1219314 482681
Puget Sound—Stillaguamish River	Canyon Creek	WA	Part of current SR distribution (WDFW 2002). Isolated observations of spawning migratory-sized bull trout.	Canyon Creek provides essential habitat used for spawning and rearing in the Canyon Creek local population. It is essential for maintaining distribution, abundance, and productivity and connectivity between SR habitats and freshwater and marine FMO habitat.	1219692 480976
Puget Sound—Stillaguamish River	Canyon Creek	WA	Part of current SR distribution (WDFW 2002). Isolated observations of spawning migratory-sized bull trout.	Canyon Creek provides essential habitat used for spawning and rearing in the Canyon Creek local population. It is essential for maintaining distribution, abundance, and productivity and connectivity between SR habitats and freshwater and marine FMO habitat.	1219692 480976
Puget Sound—Stillaguamish River	Jim Creek	WA	A productive salmon stream important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1220764 481847

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Stillaguamish River	North Fork Stillaguamish River	WA	Part of current distribution (WDFW 2002). Adult anadromous and fluvial bull trout observed in this system (Pess, in litt. 2003).	This segment of the North Fork Stillaguamish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1221262 482038.1
Puget Sound—Stillaguamish River	North Fork Stillaguamish River	WA	Part of current rearing distribution (WDFW 2002). Adult anadromous and fluvial bull trout observed in this system (Pess, in litt. 2003). Accessible post-dispersal rearing habitat downstream of local populations.	This segment of the North Fork Stillaguamish River provides essential spawning, rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1221262 482038.3
Puget Sound—Stillaguamish River	South Fork Stillaguamish River	WA	Part of current SR distribution (WDFW 2002). Major spawning area recently located above mouth of Palmer Creek, and juveniles identified during electrofishing surveys (Downen, in litt. 2003). No extensive juvenile surveys have been conducted. It is a productive salmon and steelhead stream.	This segment of the South Fork Stillaguamish River provides essential spawning, rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1221262 482048.2
Puget Sound—Stillaguamish River	South Fork Stillaguamish River	WA	Part of current SR distribution (WDFW 2002). Major spawning area recently located above mouth of Palmer Creek, and juveniles identified during electrofishing surveys (Downen, in litt. 2003). No extensive juvenile surveys have been conducted. It is a productive salmon and steelhead stream.	This segment of the South Fork Stillaguamish River provides essential spawning, rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1221262 482048.2
Puget Sound—Stillaguamish River	Pilchuck Creek	WA	Productive salmon stream, and likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1222246 482085

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Stillaguamish River	Cook Slough	WA	Part of current distribution (WDFW 2002). Anadromous and fluvial bull trout observed in this system (WDFW 1998).	This segment of the Stillaguamish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1222452 481950
Puget Sound—Stillaguamish River	Stillaguamish River	WA	Part of current distribution (WDFW 2002). Anadromous and fluvial bull trout observed in this system (WDFW 1998).	This segment of the Stillaguamish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1223515 482361
Puget Sound—Stillaguamish River	South Slough	WA	Part of current distribution (WDFW 2002). Anadromous and fluvial bull trout observed in this system (WDFW 1998).	This segment of the Stillaguamish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1222642 482059
Puget Sound—Stillaguamish River	South Pass	WA	Part of current distribution (WDFW 2002). Anadromous and fluvial bull trout observed in this system (WDFW 1998).	This segment of the Stillaguamish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1223847 482256
Puget Sound—Stillaguamish River	West Pass	WA	Part of current distribution (WDFW 2002). Anadromous and fluvial bull trout observed in this system (WDFW 1998).	This segment of the Stillaguamish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1223956 482502
Puget Sound—Stillaguamish River	Hat Slough	WA	Part of current distribution (WDFW 2002). Anadromous and fluvial bull trout observed in this system (WDFW 1998).	This segment of the Stillaguamish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1223609 481974

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Stillaguamish River	North Fork Stillaguamish River	WA	Part of current rearing distribution (WDFW 2002). Adult anadromous and fluvial bull trout observed in this system (Pess, in litt. 2003).	This segment of the North Fork Stillaguamish River provides essential rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1221262 482038.2
Puget Sound—Stillaguamish River	South Fork Stillaguamish River	WA	Part of current distribution (WDFW 2002). Adult anadromous and fluvial bull trout observed in this system (WDFW 1998).	This segment of the South Fork Stillaguamish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1221262 482048.1

2.6. Samish River Critical Habitat Subunit

The Samish River CHSU is of secondary importance relative to CHSUs containing natal populations but it provides important FMO habitat (outside of core areas) essential to the amphidromous life history form (see Appendix 1 for more detailed information).

The Samish River CHSU is located in the Puget Sound lowlands with its headwaters in the broad, flat valley floor above the city of Wickersham, Washington. The Samish River system flows southwest towards Puget Sound, discharging into Samish Bay. The Samish River CHSU includes the Samish River; its major tributary, Friday Creek; and other associated tributaries. The amphidromous bull trout using this productive salmon system are likely from several core areas within Puget Sound (e.g., Nooksack, Lower Skagit, and Stillaguamish Rivers). A total of approximately 38.3 km (23.8 mi) of stream is designated as critical habitat. The following water bodies are included in this CHSU (see Table 16):

(A) The Samish River from the mouth at Puget Sound upstream 38.3 km (23.8 mi) to an unnamed tributary (stream catalog number 0079) provides FMO habitat for amphidromous bull trout outside of currently delineated core areas in the Puget Sound CHU.

Table 16. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Samish River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Samish River	Samish River	WA	Anadromous bull trout were incidentally captured by fisherman during the 1970s (Kraemer, in litt. 2003b; Castle, pers. comm. 2003), 1980s (Toba, pers. comm. 2003), and more recently (Peterson, pers. comm. 2004; Barkdull, pers. comm. 2009). It is a productive salmon stream important for seasonal foraging by anadromous bull trout, and possibly overwintering (Burley, in litt. 1997).	Waterbodies used by anadromous bull trout, but currently lying outside of designated core areas, are essential to maintaining the current distribution, abundance, and productivity of bull trout within the recovery unit. The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1224558 485551

2.7. Snohomish–Skykomish River Critical Habitat Subunit

The Snohomish–Skykomish River CHSU is essential to bull trout conservation because it represents the second stronghold for the amphidromous life history form within the Coastal RU. It also represents part of the core distribution of amphidromous bull trout in Puget Sound. Extensive portions of the habitat are within protected areas (Henry Jackson Wilderness, Wild Sky Wilderness, and Alpine Lakes Wilderness) (see Appendix 1 for more detailed information).

The Snohomish–Skykomish River CHSU is located on the western slopes of the Cascade Range and includes the mainstem Snohomish River; the lower Snoqualmie River; the mainstem Skykomish River and its two major forks, the North and South Forks; and associated tributaries accessible to bull trout. The Snohomish–Skykomish River system flows west from the Cascade Mountain Range towards Puget Sound, discharging into Possession Sound near the city of Everett, Washington. A total of 455.0 km (282.7 mi) of stream is designated as critical habitat. The following water bodies are included in this CHSU (see Table 17):

(A) The Snohomish River from its mouth at Puget Sound upstream 32.3 km (20.1 mi) to its confluence with the Skykomish and Snoqualmie Rivers—including Ebey, Steamboat, and Union Sloughs—provide foraging and overwintering habitat and an essential migratory corridor for amphidromous bull trout. Pilchuck River upstream 57.1 km (35.5 mi) to a natural barrier provides FMO habitat in the lower reaches of the Snohomish River.

(B) Snoqualmie River from its mouth upstream approximately 63.2 km (39.3 mi) to Snoqualmie Falls; Tolt River upstream 13.5 km (8.4 mi) to its confluence with the North Fork Tolt River and South Fork Tolt River; North Fork Tolt River upstream 6.1 km (3.8 mi) to a natural barrier; and South Fork Tolt River upstream 13.0 km (8.1 mi) to a natural barrier all provide FMO habitat for the Snohomish–Skykomish Rivers core area.

(C) The following tributaries upstream from their mouths or confluence provide FMO habitat for the Snohomish–Skykomish Rivers core area: Skykomish River from its confluence with the Snohomish and Snoqualmie Rivers upstream 46.7 km (29.0 mi) to its confluence with the North Fork Skykommish River and South Fork Skykomish River; Elwell Creek upstream 4.0 km (2.5 mi) to its confluence with Youngs Creek; McCoy Creek upstream 2.6 km (1.6 mi) to a natural barrier; Sultan River upstream 15.6 km (9.7 mi) to Everett Diversion Dam; Wallace River upstream 14.3 km (8.9 mi) to Wallace Falls; and Proctor Creek upstream 1.9 km (1.2 mi) to a natural barrier. The Skykomish River provides an essential migratory corridor for amphidromous bull trout.

(D) The following tributaries from their mouths upstream to natural barriers or falls provide spawning and rearing habitat for the North Fork Skykomish River local population and extended rearing habitat for the Salmon Creek local population in the Snohomish–Skykomish Rivers core area: North Fork Skykomish River upstream approximately 30.6 km (19.0 mi) to a natural barrier falls located between Goblin and Quartz Creeks; Lewis Creek upstream 1.6 km (1.0 mi); Bitter Creek upstream 0.3 km (0.2 mi); Snowslide Gulch upstream 0.3 km (0.2 mi); Trout Creek upstream 5.9 km (3.7 mi); Excelsior Creek upstream 0.8 km (0.5 mi); Silver Creek upstream 4.8 km (3.0 mi); West Cady Creek upstream 1.1 km (0.7 mi); and Goblin Creek upstream 0.6 km (0.4 mi). Salmon Creek upstream 4.0 km (2.5 mi) to a natural barrier and South Fork Salmon Creek upstream 0.8 km (0.5 mi) to a natural barrier provide spawning and rearing habitat for the local population. Troublesome Creek upstream approximately 5.1 km (3.2 mi) to a natural barrier provides spawning and rearing habitat for the Troublesome Creek local population

upstream of the anadromous barrier (at a point upstream 0.4 km (0.25 mi)) and additional spawning and rearing habitat for the North Fork Skykomish River local population downstream of the anadromous barrier. The North Fork Skykomish River also provides an essential migratory corridor for amphidromous bull trout.

(E) South Fork Skykomish River from its confluence upstream approximately 31.5 km (19.6 mi) to its confluence with the Tye and Foss Rivers provides FMO habitat. The South Fork Skykomish River also provides an essential migratory corridor for amphidromous bull trout. The following tributaries provide spawning and rearing habitat from their mouths upstream to natural barriers or falls for the South Fork Skykomish River local population in the Snohomish–Skykomish Rivers core area: Index Creek upstream 1.6 km (1.0 mi); Money Creek upstream 5.6 km (3.5 mi); Beckler River upstream 19.6 km (12.2 mi); and its tributary, the Tye River, upstream 7.2 (4.5 mi). Miller River upstream 5.6 km (3.5 mi) to its confluence with West Fork Miller River and East Fork Miller River also provides rearing habitat for the local population. Bull trout recently have been documented spawning in the Beckler River. It is expected that as amphidromous bull trout increase in abundance, greater use of these streams and other accessible tributaries to the South Fork Skykomish and Beckler Rivers will occur.

(F) Foss River upstream 6.9 km (4.3 mi) to its confluence with the East Fork Foss River and West Fork Foss River provides foraging and overwintering habitat and potentially rearing habitat for the South Fork Skykomish River local population. It also provides an essential migratory corridor for amphidromous bull trout. East Fork Foss River upstream 1.6 km (1.0 mi) to a natural barrier and West Fork Foss River upstream 3.2 km (2.0 mi) to a natural barrier provide spawning and rearing habitat for the South Fork Skykomish River local population. It is expected that as amphidromous bull trout increase in abundance, greater use of these streams and other accessible tributaries will occur.

Table 17. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Snohomish–Skykomish Rivers CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Snohomish–Skykomish Rivers	Rapid River	WA	Connected to occupied stream (Beckler River). Rapid River is within the home watershed of a known local population (South Fork Skykomish River) of bull trout. Rapid River has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1212922 478034
Puget Sound—Snohomish–Skykomish Rivers	East Fork Foss River	WA	Part of current SR distribution (WDFW 2002)	East Fork Foss River provides essential habitat used for spawning and rearing in the South Fork Skykomish River local population. It is essential for maintaining distribution, abundance, and productivity.	1212925 476527
Puget Sound—Snohomish–Skykomish Rivers	West Fork Foss River	WA	Subadult bull trout collected at RM 0.75 in August 2004 (Arrigoni, in litt. 2004). WF Foss River has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1212925 476537
Puget Sound—Snohomish–Skykomish Rivers	Foss River	WA	Part of current distribution (WDFW 2002). Adults must migrate through this reach to access upstream spawning areas.	This segment of the Foss River provides essential, rearing, foraging, and migration habitat for fluvial and anadromous life history forms. It is essential to maintaining the current distribution, abundance, and productivity of bull trout within the Snohomish-Skykomish River core area. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat.	1213055 477054
Puget Sound—Snohomish–Skykomish Rivers	Tye River	WA	Connected to occupied stream (South Fork Skykomish River). Tye River is within the home watershed of a known local population of bull trout. Tye River has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1213055 477064
Puget Sound—Snohomish–Skykomish Rivers	Goblin Creek	WA	Part of current SR distribution (WDFW 2002). Contains part of the spawning index reach for the Snohomish-Skykomish River system.	Goblin Creek provides essential habitat used for spawning and rearing in the North Fork Skykomish River local population. It is essential for maintaining distribution, abundance, and productivity.	1213074 479187

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Snohomish–Skykomish Rivers	West Cady Creek	WA	Part of current SR distribution (WDFW 2002). Contains part of the spawning index reach for the Snohomish-Skykomish River system.	West Cady Creek provides essential habitat used for spawning and rearing in the North Fork Skykomish River local population. It is essential for maintaining distribution, abundance, and productivity.	1213182 478994
Puget Sound—Snohomish–Skykomish Rivers	Beckler River	WA	Part of recent expansion of SR distribution within the system (Kraemer, in litt. 2003a).	Beckler River provides essential habitat used for spawning and rearing in the South Fork Skykomish River local population. It is essential for maintaining distribution, abundance, and productivity.	1213388 477152
Puget Sound—Snohomish–Skykomish Rivers	Miller River	WA	Connected to occupied stream (South Fork Skykomish River). Stream is within the home watershed of a known local population (South Fork Skykomish River) of bull trout. Stream has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1213930 477194
Puget Sound—Snohomish–Skykomish Rivers	Troublesome Creek	WA	Part of current SR distribution (WDFW 1998; WDFW 2002), primarily resident forms above river mile 0.25. Stream located primarily in Henry Jackson Wilderness.	Troublesome Creek provides essential habitat used for spawning and rearing in the Troublesome Creek local population and part of the North Fork Skykomish River local population. It is essential for maintaining distribution, abundance, and productivity.	1214029 478970
Puget Sound—Snohomish–Skykomish Rivers	Money Creek	WA	Connected to occupied stream (South Fork Skykomish River). Stream is within the home watershed of a known local population (South Fork Skykomish River) of bull trout. Stream has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1214252 477289
Puget Sound—Snohomish–Skykomish Rivers	Silver Creek	WA	Connected to occupied stream (North Fork Skykomish River). Stream is within the home watershed of a known local population (North Fork Skykomish River) of bull trout. Stream has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1214351 478970
Puget Sound—Snohomish–Skykomish Rivers	Salmon Creek	WA	Part of current SR distribution (WDFW 2002). Pre-spawn adult bull trout observed in this system near the confluence with South Fork Salmon Creek (David Evans and Associates and R2 Resources Consultants 1998a).	Salmon Creek provides essential habitat used for spawning and rearing in the Salmon Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1214575 478798

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Snohomish–Skykomish Rivers	South Fork Salmon Creek	WA	Part of current SR distribution (WDFW 2002).	South Fork Salmon Creek provides essential habitat used for spawning and rearing in the Salmon Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1214749 479057
Puget Sound—Snohomish–Skykomish Rivers	Index Creek	WA	Connected to occupied stream (South Fork Skykomish River). Stream is within the home watershed of a known local population (South Fork Skykomish River) of bull trout. Stream has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1214801 477663
Puget Sound—Snohomish–Skykomish Rivers	Trout Creek	WA	Juvenile observed in 1998 (David Evans and Associates and R2 Resource Consultants 1998b). Stream is within the home watershed of a known local population of bull trout. Stream has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1214866 478644
Puget Sound—Snohomish–Skykomish Rivers	Excelsior Creek	WA	Connected to occupied stream (North Fork Skykomish River). Stream is within the home watershed of a known local population (North Fork Skykomish River) of bull trout. Stream has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1214903 478641
Puget Sound—Snohomish–Skykomish Rivers	Snowslide Gulch	WA	Connected to occupied stream (North Fork Skykomish River). Stream is within the home watershed of a known local population (North Fork Skykomish River) of bull trout. Stream has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1215019 478578
Puget Sound—Snohomish–Skykomish Rivers	Bitter Creek	WA	Connected to occupied stream (North Fork Skykomish River). Stream is within the home watershed of a known local population (North Fork Skykomish River) of bull trout. Stream has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1215072 478403
Puget Sound—Snohomish–Skykomish Rivers	Lewis Creek	WA	Connected to occupied stream (North Fork Skykomish River). Stream is within the home watershed of a known local population (North Fork Skykomish River) of bull trout. Stream has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1215244 478236

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Snohomish–Skykomish Rivers	North Fork Skykomish River	WA	Part of current distribution (WDFW 2002). Contains primary part of the spawning index reach for the Snohomish-Skykomish River system (WDFW 1998). Rearing juveniles and subadults can be found throughout this segment.	This segment of the North Fork Skykomish River provides essential spawning, rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential to maintaining the current distribution, abundance, and productivity of bull trout within the Snohomish-Skykomish River core area. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat.	1215779 478133
Puget Sound—Snohomish–Skykomish Rivers	North Fork Skykomish River	WA	Part of current distribution (WDFW 2002). Contains primary part of the spawning index reach for the Snohomish-Skykomish River system (WDFW 1998). Rearing juveniles and subadults can be found throughout this segment.	This segment of the North Fork Skykomish River provides essential spawning, rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential to maintaining the current distribution, abundance, and productivity of bull trout within the Snohomish-Skykomish River core area. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat.	1215779 478133
Puget Sound—Snohomish–Skykomish Rivers	South Fork Skykomish River	WA	Part of current distribution (WDFW 2002). Migratory bull trout have been transported above Sunset Falls since 1958. An average of 50 adults is transported above Sunset Falls on an annual basis. Ninety adults were passed in 2002 (Kraemer, in litt. 2003a).	This segment of the South Fork Skykomish River provides essential spawning, rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential to maintaining the current distribution, abundance, and productivity of bull trout within the Snohomish-Skykomish River core area. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat.	1215779 478143
Puget Sound—Snohomish–Skykomish Rivers	South Fork Skykomish River	WA	Part of current distribution (WDFW 2002). Migratory bull trout have been transported above Sunset Falls since 1958. An average of 50 adults is transported above Sunset Falls on an annual basis. Ninety adults were passed in 2002 (Kraemer, in litt. 2003a).	This segment of the South Fork Skykomish River provides essential spawning, rearing, foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential to maintaining the current distribution, abundance, and productivity of bull trout within the Snohomish-Skykomish River core area. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat.	1215779 478143
Puget Sound—Snohomish–Skykomish Rivers	Proctor Creek	WA	Productive salmon stream likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout. Stream has not been extensively surveyed for bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1216445 478354

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Snohomish–Skykomish Rivers	Wallace River	WA	Part of current distribution (WDFW 2002). It is a productive salmon stream important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1217938 478591
Puget Sound—Snohomish–Skykomish Rivers	Sultan River	WA	Part of current distribution (WDFW 2002). It is a productive salmon stream important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1218192 478598
Puget Sound—Snohomish–Skykomish Rivers	North Fork Tolt River	WA	Part of current distribution (WDFW 2002). Adult observed near river mile 2.2 in fall of 1999 (KCDNR 2000; Glasgow, in litt 2005b). It is a productive salmon stream important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1218201 476960
Puget Sound—Snohomish–Skykomish Rivers	South Fork Tolt River	WA	Part of current distribution (WDFW 2002). Adults observed between river mile 3.2 and 5.2 in late 1990s during snorkel surveys (KCDNR 2000). Single bull trout observed at river mile 3.9 in September 2000, and another observed at river mile 5.0 in August 2002 (Glasgow, in litt. 2005b). It is a productive salmon stream important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1218201 476970
Puget Sound—Snohomish–Skykomish Rivers	McCoy Creek	WA	Productive salmon stream likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout. Stream has not been extensively surveyed for bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1218236 478484

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Snohomish–Skykomish Rivers	Elwell Creek	WA	Productive salmon stream likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout. Stream has not been extensively surveyed for bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1218516 478386
Puget Sound—Snohomish–Skykomish Rivers	Tolt River	WA	Part of current distribution (WDFW 2002). Bull trout observed in both its forks in 1990s (KCDNR 2000; Glasgow, in litt. 2005a). It is a productive salmon stream important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1219256 476406
Puget Sound—Snohomish–Skykomish Rivers	Snoqualmie River	WA	Part of current distribution (WDFW 2002). It is a productive salmon stream important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1220450 478301
Puget Sound—Snohomish–Skykomish Rivers	Skykomish River	WA	Currently occupied by migratory bull trout (WDFW 1998; Goetz, in litt. 2003).	This segment of the Skykomish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1220450 478302
Puget Sound—Snohomish–Skykomish Rivers	Pilchuck River	WA	Part of current distribution (WDFW 2002). Acoustical tagged adult recaptured February 2003 at RM 3.5 by angler (Starkes, in litt. 2003). Adult bull trout observed in lower river reach in September 2003 (Meacham, in litt. 2003). It is a productive salmon stream important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1220899 479044
Puget Sound—Snohomish–Skykomish Rivers	Snohomish River	WA	Currently occupied by migratory bull trout (WDFW 1998; Goetz, in litt. 2003).	This segment of the Snohomish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1222080 480202

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Snohomish–Skykomish Rivers	Steamboat Slough	WA	Currently occupied by migratory bull trout (WDFW 1998; Goetz, in litt. 2003).	This segment of the Snohomish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1221506 480015
Puget Sound—Snohomish–Skykomish Rivers	Steamboat Slough	WA	Currently occupied by migratory bull trout (WDFW 1998; Goetz, in litt. 2003).	This segment of the Snohomish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1221506 480015
Puget Sound—Snohomish–Skykomish Rivers	Snohomish River	WA			1222080 480202
Puget Sound—Snohomish–Skykomish Rivers	Ebey Slough	WA	Currently occupied by migratory bull trout (WDFW 1998; Goetz, in litt. 2003).	This segment of the Snohomish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1221521 480088

2.8. Lake Washington Critical Habitat Subunit

The Lake Washington CHSU is of secondary importance relative to CHSUs containing natal populations but it provides important FMO habitat (outside of core areas) essential to the amphidromous life history form (see Appendix 1 for more detailed information).

The Lake Washington CHSU lies within central Puget Sound. Lake Washington is connected to Puget Sound by the Lake Washington Ship Canal, which flows into Salmon Bay through the Ballard Locks system in Seattle. The Lake Washington CHSU includes Lake Washington, Cedar and Sammamish Rivers, and associated tributaries. It does not include the upper Cedar River basin above Cedar Falls. This productive salmon system supports bull trout FMO habitat for amphidromous bull trout outside of currently designated core areas. The bull trout using this system are likely from several core areas within Puget Sound in close proximity to this system (e.g., Stillaguamish and Snohomish–Skykomish Rivers) and perhaps from core areas further away. A total of approximately 9,288.0 ha (22,951.1 ac) of lake surface area is designated as critical habitat. The following water bodies are included in this CHSU (see Table 18):

(A) Lake Washington (8,869.0 ha (21,915.7 ac)), including the Ship Canal and Lake Union (419.0 ha (1,035.3 ac)) between the Ballard Locks and Lake Washington, provides FMO habitat for amphidromous bull trout. Bull trout have been documented in various areas of Lake Washington and in the fish ladder at Ballard Locks (KCDNR 2000, p. 20; Berge, in litt. 2003, p. 1).

Table 18. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Lake Washington CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lake Washington	Lake Union	WA	Observations have been noted in the lake and below the Ballard Locks since the 1980s (KCDNR 2000). Most recent captures were adult individuals collected by a gillnet in January 2003 (Berge, H. in litt. 2003) and March 2005 (Overman, in litt. 2005).	The recovery chapter identifies these waterbodies used by anadromous bull trout as essential to maintaining the current distribution, abundance, and productivity of bull trout within the Puget Sound Management Unit. These waterbodies provide essential and biologically important accessible habitat occupied by anadromous salmonids and other fish species which provide an important forage base for anadromous bull trout.	1223305 476416
Puget Sound—Lake Washington	Lake Washington	WA	Observations have been noted in the lake and below the Ballard Locks since the 1980s (KCDNR 2000). Most recent captures were adult individuals collected by a gillnet in January 2003 (Berge, H. in litt. 2003) and March 2005 (Overman, in litt. 2005).	The recovery chapter identifies these waterbodies used by anadromous bull trout as essential to maintaining the current distribution, abundance, and productivity of bull trout within the Puget Sound Management Unit. These waterbodies provide essential and biologically important accessible habitat occupied by anadromous salmonids and other fish species which provide an important forage base for anadromous bull trout.	1222454 476194
Puget Sound—Lake Washington	Ship Canal (Chittendon Locks)	WA	Observations have been noted in the lake and below the Ballard Locks since the 1980s (KCDNR 2000). Most recent captures were adult individuals collected by a gillnet in January 2003 (Berge, H. in litt. 2003) and March 2005 (Overman, in litt. 2005).	The recovery chapter identifies these waterbodies used by anadromous bull trout as essential to maintaining the current distribution, abundance, and productivity of bull trout within the Puget Sound Management Unit. These waterbodies provide essential and biologically important accessible habitat occupied by anadromous salmonids and other fish species which provide an important forage base for anadromous bull trout. This waterbody is the key corridor for anadromous bull trout migrating to and from Lake Washington.	1223785 476596

2.9. Lower Green River Critical Habitat Subunit

The Lower Green River CHSU is of secondary importance relative to CHSUs containing natal populations but it provides important FMO habitat (outside of core areas) essential to the amphidromous life history form (see Appendix 1 for more detailed information).

The Lower Green River CHSU includes the Duwamish and Green Rivers and associated tributaries below Tacoma's Headworks Diversion Dam. The Green River is a productive salmon system, initiating in the Cascade Range and flowing west into Howard Hansen Reservoir. It is free flowing below the City of Tacoma's Headworks Diversion Dam (located approximately 7.2 km (4.5 mi) downstream of Howard Hansen Dam), eventually becoming the Duwamish River before discharging into Elliott Bay. This system supports FMO habitat for amphidromous bull trout. The amphidromous bull trout using this system are likely from several core areas within Puget Sound in close proximity to this system (e.g., Puyallup and Snohomish–Skykomish Rivers) and perhaps even from core areas further away. Historical accounts (Suckley and Cooper 1860, pp. 342–343) suggest that bull trout were much more abundant in the Green River and likely used this system for spawning and rearing in the past. However, past changes made to the drainage basin (permanent redirection of the White River into the Puyallup River Basin and the Cedar River into the Lake Washington Basin) have likely influenced the level of use. A total of 99.8 km (62.0 mi) of stream is designated as critical habitat. The following water bodies are included in this CHSU (see Table 19):

(A) Duwamish River from the mouth at Puget Sound (including the East and West Waterways) upstream 21.1 km (13.1 mi) to the Black River and the Green River from its confluence with the Black River upstream 78.7 km (48.9 mi) to the City of Tacoma's Headworks Diversion Dam provide FMO habitat for amphidromous bull trout.

Table 19. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Lower Green River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Green River	Green River	WA	Currently occupied by anadromous bull trout (KCDNR 2000; Berge and Mavros 2001). It is a productive salmon stream important for seasonal foraging by anadromous bull trout.	The draft recovery chapter identifies this waterbody used by anadromous bull trout, but currently lying outside of designated core areas, as essential to maintaining the current distribution, abundance, and productivity of bull trout within the recovery unit. The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for anadromous bull trout.	1222505 474752
Puget Sound—Lower Green River	Duwamish River	WA	Currently occupied by anadromous bull trout (Shannon, in litt. 2001, 2003). Lower river reach of productive salmon system important for seasonal foraging by anadromous bull trout.	The draft recovery chapter identifies this waterbody used by anadromous bull trout, but currently lying outside of designated core areas, as essential to maintaining the current distribution, abundance, and productivity of bull trout within the recovery unit. The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for anadromous bull trout.	1222800 474993
Puget Sound—Lower Green River	West Duwamish Waterway	WA	Currently occupied by anadromous bull trout (Shannon, in litt. 2001, 2003). Lower river reach of productive salmon system important for seasonal foraging by anadromous bull trout.	The draft recovery chapter identifies this waterbody used by anadromous bull trout, but currently lying outside of designated core areas, as essential to maintaining the current distribution, abundance, and productivity of bull trout within the recovery unit. The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for anadromous bull trout.	1223588 475856
Puget Sound—Lower Green River	Duwamish Waterway	WA	Currently occupied by anadromous bull trout (Shannon, in litt. 2001, 2003). Lower river reach of productive salmon system important for seasonal foraging by anadromous bull trout.	The draft recovery chapter identifies this waterbody used by anadromous bull trout, but currently lying outside of designated core areas, as essential to maintaining the current distribution, abundance, and productivity of bull trout within the recovery unit. The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for anadromous bull trout.	1223588 475856

2.10. Lower Nisqually River Critical Habitat Subunit

The Lower Nisqually River CHSU is of secondary importance relative to CHSUs containing natal populations but provides important FMO habitat for the amphidromous life history form, especially in southern Puget Sound. It is important for future recovery efforts (i.e., recolonization or reintroduction) as amphidromous populations increase in abundance (see Appendix 1 for more detailed information).

The Lower Nisqually River CHSU includes the Nisqually River and associated tributaries below La Grande Dam. The Nisqually River system, fed primarily by the glaciers of Mount Rainier, flows west to Alder Lake and through Alder and La Grande Dams before discharging into Puget Sound at the Nisqually River delta at the Nisqually National Wildlife Refuge. The Nisqually River system supports FMO habitat for amphidromous bull trout. The amphidromous bull trout currently observed in this system, and those likely to use this system in the future, are believed to be from other core areas within Puget Sound (e.g., Puyallup and Snohomish–Skykomish Rivers). A total of approximately 64.0 km (39.7 mi) of stream is designated as critical habitat. The following water bodies are included in this CHSU (see Table 20):

(A) The Nisqually River from its mouth at Puget Sound upstream 64.5 km (40.1 mi) to La Grande Dam provides FMO habitat for amphidromous bull trout. Although bull trout are now rarely observed in the Nisqually River (WDFW 1998, p. 117; John Barr, Nisqually Tribe, pers. comm. 2003; Ellings, in litt. 2004, p. 1), historical accounts (Suckley and Cooper 1860, pp. 342–343) suggest that bull trout were much more abundant and likely used this system for spawning and rearing in the past. It is expected that amphidromous bull trout use of the Nisqually River will increase significantly as bull trout populations recover in the Puyallup River core area.

Table 20. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Lower Nisqually River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Lower Nisqually River	Nisqually River	WA	Currently occupied by anadromous bull trout. A migratory adult was observed in a tributary (Clear Creek) to the lower reach in late 1990s (Barr, pers. comm., 2003). The most recent observation was a capture of a 179 mm subadult in the lower Nisqually River in July 2004 (Ellings, in litt. 2004). This is a productive salmon stream believed important for seasonal foraging by anadromous bull trout.	The draft recovery chapter identifies this waterbody used by anadromous bull trout, but currently lying outside of designated core areas, as essential to maintaining and increasing the current distribution, abundance, and productivity of bull trout within the recovery unit. The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for anadromous bull trout.	1226913 471008
Puget Sound—Lower Nisqually River	Nisqually River	WA	Currently occupied by anadromous bull trout. A migratory adult was observed in a tributary (Clear Creek) to the lower reach in late 1990s (Barr, pers. comm., 2003). The most recent observation was a capture of a 179 mm subadult in the lower Nisqually River in July 2004 (Ellings, in litt. 2004). This is a productive salmon stream believed important for seasonal foraging by anadromous bull trout.	The draft recovery chapter identifies this waterbody used by anadromous bull trout, but currently lying outside of designated core areas, as essential to maintaining and increasing the current distribution, abundance, and productivity of bull trout within the recovery unit. The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for anadromous bull trout.	1226913 471008
Puget Sound—Lower Nisqually River	Nisqually River	WA	Currently occupied by anadromous bull trout. A migratory adult was observed in a tributary (Clear Creek) to the lower reach in late 1990s (Barr, pers. comm., 2003). The most recent observation was a capture of a 179 mm subadult in the lower Nisqually River in July 2004 (Ellings, in litt. 2004). This is a productive salmon stream believed important for seasonal foraging by anadromous bull trout.	The draft recovery chapter identifies this waterbody used by anadromous bull trout, but currently lying outside of designated core areas, as essential to maintaining and increasing the current distribution, abundance, and productivity of bull trout within the recovery unit. The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for anadromous bull trout.	1226913 471008

2.11. Chester Morse Lake Critical Habitat Subunit

Chester Morse Lake CHSU is essential to bull trout conservation because it represents the natural expression of a rare life history form within the RU. Its isolated status provides potential refuge for the species from any threat that would largely affect amphidromous populations in the RU. The core area is encompassed by a municipal watershed managed under the Cedar River Watershed Habitat Conservation Plan so habitat is largely protected (see Appendix 1 for more detailed information).

The Chester Morse Lake CHSU is located in the upper Cedar River watershed above a natural migration barrier, lower Cedar Falls. This is a municipal watershed, providing the major source of water for the city of Seattle and surrounding communities within King County. The Chester Morse Lake CHSU includes Chester Morse Lake and its major tributaries, the Cedar and Rex Rivers, and a number of their associated tributaries. It also includes several minor tributaries to Chester Morse Lake. A total of approximately 26.0 km (16.1 mi) of stream and 798.0 ha (1,971.2 ac) of lake surface area is designated as critical habitat. The following water bodies are included in this CHSU (see Table 21):

(A) Chester Morse Lake (716.0 ha (1,769.3 ac)) includes Masonry Pool (82.0 ha (202.6 ac)) and the main lake. Chester Morse Lake provides the primary FMO habitat for a local population of adfluvial bull trout. The lake shoreline also supports juvenile rearing, especially near the mouths of the spawning tributaries. Rack Creek from its confluence with Chester Morse Lake upstream 0.8 km (0.5 mi) to a natural barrier provides spawning and rearing habitat for the local population. Shotgun Creek from its confluence with Chester Morse Lake upstream 0.5 km (0.3 mi) to a natural barrier provides spawning and rearing habitat for the local population.

(B) The following tributaries from their mouths or confluence upstream to natural barriers or confluences provide spawning and rearing habitat: Cedar River from its confluence with Chester Morse Lake upstream 12.9 km (8.0 mi) to its confluence with the North Fork Cedar River and South Fork Cedar River, including slough and side channel habitat in the lower River; an unnamed tributary (stream catalog number 0439) upstream 0.2 km (0.1 mi); North Fork Cedar River from its confluence with the South Fork Cedar River upstream 1.1 km (0.7 mi); and South Fork Cedar River from its confluence with the North Fork Cedar River upstream 1.3 km (0.8 mi) to a manmade barrier.

(C) Rex River from its confluence with Chester Morse Lake upstream 5.0 km (3.1 mi) to a natural barrier and its tributaries—Cabin Creek upstream 1.3 km (0.8 mi) to a natural barrier and Lindsay Creek upstream 0.5 km (0.3 mi) to a natural barrier—provide spawning and rearing habitat for the Chester Morse Lake local population in the Chester Morse Lake core area. Boulder Creek from its confluence with the Rex River upstream 2.4 km (1.5 mi) to a natural barrier provides spawning and rearing habitat for the local population.

Table 21. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Chester Morse Lake CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Chester Morse Lake	North Fork Cedar River	WA	Part of current SR distribution (SPU 2009). Juveniles observed up to the falls (City of Seattle 2000).	North Fork Cedar River provides essential habitat used for rearing and potentially spawning in the Cedar River local population. It is essential for maintaining distribution, abundance, and productivity.	1215199 473134
Puget Sound—Chester Morse Lake	South Fork Cedar River	WA	Part of current SR distribution (SPU 2009). Juveniles observed up to the USGS weir which constitutes a seasonal fish passage barrier.	South Fork Cedar River provides essential habitat used for rearing and potentially spawning in the Cedar River local population. It is essential for maintaining distribution, abundance, and productivity.	1215199 473144
Puget Sound—Chester Morse Lake	Unnamed trib. (#0439)	WA	Part of current SR distribution (SPU 2009).	This unnamed tributary provides essential habitat used for rearing and potentially spawning in the Cedar River local population. It is essential for maintaining distribution, abundance, and productivity.	1215338 473253
Puget Sound—Chester Morse Lake	Lindsay Creek	WA	Part of current SR distribution (SPU 2009).	Lindsay Creek provides essential habitat used for rearing and potentially spawning in the Rex River local population. It is essential for maintaining distribution, abundance, and productivity.	1216595 473508
Puget Sound—Chester Morse Lake	Cabin Creek	WA	Part of current SR distribution (SPU 2009).	Cabin Creek provides essential habitat used for spawning and rearing in the Rex River local population. It is essential for maintaining distribution, abundance, and productivity.	1216827 473671
Puget Sound—Chester Morse Lake	Boulder Creek	WA	Part of current SR distribution (SPU 2009).	Boulder Creek provides essential habitat used for spawning and rearing in the Boulder Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1216871 473708
Puget Sound—Chester Morse Lake	Rex River	WA	Part of current SR distribution, making up one of two primary spawning areas (WDFW 1998; SPU 2009).	This segment of the Rex River provides essential, spawning, rearing, foraging, and migration habitat for adfluvial life history forms. It is essential to maintaining the current distribution, abundance, and productivity of bull trout within the Chester Morse Lake core area. It is essential for directly maintaining connectivity between SR habitats and freshwater (river and lake) FMO habitat.	1216970 473867

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Chester Morse Lake	Shotgun Creek	WA	Part of current SR distribution (SPU 2009). Bull trout use was limited to a few 100 meters from the mouth of the reservoir, with sporadic SR use in the past. Removal of barrier culvert in 2001 is anticipated to significantly increase usable SR habitat.	Shotgun Creek would provide essential habitat used for spawning and rearing in the Shotgun Creek local population, if it were successfully reestablished. It would be essential for its contribution to distribution, abundance, and productivity of bull trout within the core area.	1217007 473878
Puget Sound—Chester Morse Lake	Rack Creek	WA	Part of current SR distribution (SPU 2009). Consistent, but low level of spawning annually in accessible reach.	Rack Creek provides essential habitat used for spawning and rearing in the Rack Creek local population. It is essential for maintaining distribution, abundance, and productivity.	1217159 473973
Puget Sound—Chester Morse Lake	Cedar River	WA	Part of current SR distribution, making up one of two primary spawning areas (WDFW 1998; SPU 2009). Multiple age classes observed annually within this reach.	This segment of the Cedar River provides essential spawning, rearing, foraging, and migration habitat for adfluvial life history forms. It is essential to maintaining the current distribution, abundance, and productivity of bull trout within the Chester Morse Lake core area. It is essential for directly maintaining connectivity between SR habitats and freshwater (river and lake) FMO habitat.	1222590 476452.2
Puget Sound—Chester Morse Lake	Chester Morse Lake	WA	Part of current distribution (City of Seattle 2000 and SPU 2009). Primary foraging and overwintering habitat for Chester Morse Lake local population of adfluvial bull trout.	Chester Morse Lake and Masonry Pool provide essential foraging and overwintering habitat for the Cedar River, Rex River, Boulder Creek, and Rack Creek local populations, and Shotgun Creek potential local population, and also provides additional rearing habitat for these local populations. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater FMO habitat and indirectly maintaining abundance and productivity.	1216935 473885
Puget Sound—Chester Morse Lake	Masonry Pool	WA	Part of current distribution (City of Seattle 2000 and SPU 2009). Primary foraging and overwintering habitat for Chester Morse Lake local population of adfluvial bull trout.	Chester Morse Lake and Masonry Pool provide essential foraging and overwintering habitat for the Cedar River, Rex River, Boulder Creek, and Rack Creek local populations, and Shotgun Creek potential local population, and also provides additional rearing habitat for these local populations. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater FMO habitat and indirectly maintaining abundance and productivity.	1217365 474103

2.12. Puyallup River Critical Habitat Subunit

The Puyallup River CHSU is essential to bull trout conservation because it represents the southernmost distribution of amphidromous bull trout in Puget Sound, supports multiple life history expressions, and may represent a key climate change refugium for the species due to the extensive glacially influenced habitat. Extensive portions of the habitat are within a protected area (Mount Rainier National Park) (see Appendix 1 for more detailed information).

The Puyallup River CHSU is located on the western slopes of the Cascade Range. The Puyallup River system is fed primarily by the glaciers of Mount Rainier and flows west, discharging into Puget Sound at Commencement Bay adjacent to the city of Tacoma, Washington. The Puyallup River CHSU includes the Puyallup River and its two major tributary systems, the White River and Carbon River, and their associated tributaries accessible to bull trout. A total of approximately 415.0 km (257.9 mi) of stream is designated as critical habitat. The following water bodies are included in this CHSU (see Table 22):

(A) The Puyallup River from its mouth at Puget Sound upstream approximately 74.3 km (46.2 mi) to its confluence with the North and South Puyallup Rivers provides FMO habitat. It also provides an essential migratory corridor for amphidromous bull trout. The Puyallup River tributaries, Kapowsin Creek upstream 4.8 km (3.0 mi) and Niesson Creek upstream 3.9 km (2.4 mi) to natural barriers, provide FMO habitat for the lower Puyallup River. The following upper Puyallup River tributaries from their mouths upstream provide spawning and rearing habitat for the Upper Puyallup and Mowich Rivers local population: Deer Creek upstream 4.5 km (2.8 mi) to a natural barrier; Swift Creek upstream 1.0 km (0.6 mi) to a natural barrier; South Puyallup River from its confluence with the North Puyallup River upstream 8.0 km (5.0 mi) to its headwaters and its tributary, St. Andrews Creek, upstream 0.3 km (0.2 mi) to Larrupin Falls; and North Puyallup River upstream 6.4 km (4.0 mi) to its headwaters.

(B) Mowich River from its confluence with the Puyallup River upstream 12.1 km (7.5 mi) to its confluence with the North and South Mowich Rivers and North Mowich River upstream 1.6 km (1.0 mi) and South Mowich River upstream 6.6 km (4.1 mi) to their headwaters provide spawning and rearing habitat for the Upper Puyallup and Mowich Rivers' local populations.

(C) Carbon River from its confluence with the Puyallup River upstream approximately 49.0 km (31.0 mi) to accessible headwaters near the mouth of Spukwush Creek provides spawning and rearing habitat for the Carbon River local population upstream of the top of canyon reach near Fairfax Bridge and FMO habitat downstream of the top of canyon reach near Fairfax Bridge. The Carbon River provides an essential migratory corridor for amphidromous bull trout. South Prairie Creek from its mouth upstream 24.1 km (15.0 mi) to a natural barrier provides the primary tributary FMO habitat for the local population. The following tributaries from their mouths upstream to natural barriers or falls provide spawning and rearing habitat for the local population: Poch Creek upstream 0.8 km (0.5 mi); Tolmie Creek upstream 0.8 km (0.5 mi); June Creek upstream 1.1 km (0.7 mi); Falls Creek upstream 1.6 km (1.0 mi); Ranger Creek upstream 0.6 km (0.4 mi) to Ranger Falls; Chenuis Creek upstream 0.2 km (0.1 mi) to Chenuis Falls; an unnamed tributary (just upstream of Chenius Creek) upstream 0.5 km (0.3 mi); Ipsut Creek upstream 1.1 km (0.7 mi) to Isput Falls; and an unnamed tributary (stream catalog number 0565) upstream 0.2 km (0.1 mi).

(D) White River from its confluence with Puyallup River upstream approximately 116.2 km (72.2 mi) to the mouth of Inter Fork provides FMO habitat downstream of its confluence with

the Clearwater River and combined rearing and FMO habitat, and potentially spawning habitat, upstream of its confluence. Huckleberry Creek from its mouth upstream 11.4 km (7.1 mi) to a natural barrier provides productive tributary FMO habitat. The following tributaries from their mouths upstream to natural barriers or headwaters provide spawning and rearing habitat for the White River local population: Buck Creek upstream 0.8 km (0.5 mi); Doe Creek upstream 1.6 km (1.0 mi); Silver Creek upstream 0.8 km (0.5 mi); Silver Springs (near Silver Creek) upstream 0.3 km (0.2 mi); an unnamed tributary (stream catalog number 0336) upstream 0.5 km (0.3 mi); Sunrise Creek upstream 0.5 km (0.3 mi); Crystal Creek upstream 0.3 km (0.2 mi); an unnamed tributary ((left bank (LB) 1 upstream of Crystal Creek) upstream 0.3 mi (0.2 mi); an unnamed tributary (LB2 upstream of Crystal Creek) upstream 0.3 km (0.2 mi); an unnamed tributary (right bank (RB) upstream of Crystal Creek) upstream 0.2 km (0.1 mi); Parallel Creek upstream 1.0 km (0.6 mi); Klickitat Creek upstream 0.3 km (0.2 mi); an unnamed tributary (stream catalog number 0364) upstream 0.5 km (0.3 mi); Shaw Creek upstream 1.8 km (1.1 mi); Discovery Creek upstream 1.0 km (0.6 mi); Fryingpan Creek upstream 3.2 km (2.0 mi) to accessible headwaters; and Wright Creek upstream 0.2 km (0.1 mi). Clearwater River from its confluence with the White River upstream 10.4 km (6.5 mi) to a natural barrier provides productive FMO habitat.

(E) Greenwater River from its confluence with the White River upstream 20.1 km (12.5 mi) provides FMO habitat for migratory bull trout and provides connectivity with tributaries that may support spawning and rearing habitat important for recovery once restored.

(F) The following tributaries from their mouths or confluence upstream to natural barriers provide spawning and rearing habitat for the West Fork White River local population: West Fork White River from its confluence with the White River upstream 25.7 km (16.0 mi); Hazzard Creek upstream 0.8 km (0.5 mi); an unnamed tributary (stream catalog number 0194) upstream 0.8 km (0.5 mi); Viola Creek upstream 1.9 km (1.2 mi); Wrong Creek upstream 3.2 km (2.0 mi); Cripple Creek upstream 0.8 km (0.5 mi); an unnamed tributary (stream catalog number 0214) upstream 0.8 km (0.5 mi); an unnamed tributary (stream catalog number 0217) upstream 0.2 km (0.1 mi); an unnamed tributary (stream catalog number 0219) upstream 0.3 km (0.2 mi); Van Horn Creek upstream 0.2 km (0.1 mi); an unnamed tributary (stream catalog number 0234) upstream 0.8 km (0.5 mi); its unnamed tributary (stream catalog number 0226) upstream 0.3 km (0.2 mi); and Lodi Creek upstream 2.9 km (1.8 mi) to Afi Falls.

Table 22. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Puyallup River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puyallup River	Parallel Creek	WA	Spawning bull trout were detected by a radio telemetry project conducted in 2006 by the Puyallup Tribe (Ladley et al. 2007), as well by subsequent spawning surveys in 2008 (Marks in litt. 2009).	Parallel Creek provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1213253 465439
Puget Sound—Puyallup River	Discovery Creek	WA	One of the current bull trout spawning index areas in the White River local population surveyed by the Puyallup Tribe (Marks, in litt. 2009). Bull trout spawning first detected in 2007 (Marks, in litt. 2009).	Discovery Creek provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1213411 465400
Puget Sound—Puyallup River	Unnamed trib. (#0219)	WA	Recently confirmed as bull trout spawning stream during survey efforts conducted by the Puyallup Tribe (Marks, in litt. 2009).	This unnamed tributary provides essential habitat used for spawning and rearing in the West Fork White River local population. It is essential for maintaining distribution, abundance, and productivity.	1214216 465923
Puget Sound—Puyallup River	Silver Creek	WA	Spawning bull trout were detected by a radio telemetry project conducted in 2006 by the Puyallup Tribe (Ladley et al. 2007), as well by subsequent stream surveys conducted in 2008 (Marks, in litt. 2009).	Silver Creek provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity. It is only one of two spawning areas for bull trout that have been located outside of Mt Rainier National Park (Ladley et al. 2007).	1215289 469993
Puget Sound—Puyallup River	Silver Springs	WA	Part of current distribution (WDFW 2002). Adult bull trout and redds observed annually, with only two redds observed in 2008 (Marks, in litt. 2009).	Silver Springs provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity. It is only one of two spawning areas for bull trout that have been located outside of Mt Rainier National Park (Ladley et al. 2007).	1215314 469975
Puget Sound—Puyallup River	Doe Creek	WA	Connected to occupied stream (White River). Stream is within the home watershed of a known local population (Upper White River) of bull trout. Stream has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1215519 470281
Puget Sound—Puyallup River	Buck Creek	WA	Connected to occupied stream (White River). Stream is within the home watershed of a known local population (Upper White River) of bull trout. Stream has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1215542 470286

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puyallup River	Shaw Creek	WA	One of the current bull trout spawning index areas in the White River local population surveyed by the Puyallup Tribe (Marks, in litt. 2009).	Shaw Creek provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1215669 469003
Puget Sound—Puyallup River	Huckleberry Creek	WA	A large adult migratory bull trout observed in 1989, during pre-spawn migration period (Stagner, pers. comm. 2003). Stream is within the home watershed of a known local population of bull trout. Stream has not been extensively surveyed for bull trout. Upper reaches are within the Mount Rainier National Park so habitat is relatively pristine. However, no bull trout spawners were tracked moving into this system during recent radio telemetry surveys conducted in the White River (Ladley et al. 2007).	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1215848 470793
Puget Sound—Puyallup River	Fryingpan Creek	WA	Part of current distribution (MRNP 2009). Young of year and juvenile bull trout observed in 1993 (MRNP, in litt. 2001). One of the current bull trout spawning index areas in the White River local population surveyed by the Puyallup Tribe (Marks, in litt. 2009).	Fryingpan Creek provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1216006 468910
Puget Sound—Puyallup River	West Fork White River	WA	Part of current distribution (MRNP 2009). Juvenile and subadult bull trout captured during electrofishing surveys in 1993 (WDFW 1998).	This segment of the White River provides essential rearing, foraging, migration, and overwintering habitat, and potentially spawning habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and maintaining abundance and productivity.	1216181 471251
Puget Sound—Puyallup River	Greenwater River	WA	Part of current distribution (WDFW 2002). In early 1990s, an adult migratory bull trout observed during summer snorkel survey (Stagner, pers. comm., 2003). Bull trout were also observed in August 1991 between river mile 3 and 4 during USFS surveys (USFS, in litt. 1991). Adult bull trout observed at approximately river mile 11.7 in June 2004 (Schuett-Hames, in litt. 2004). However, no bull trout spawners were tracked moving into this system during recent radio telemetry surveys conducted in the White River (Ladley et al. 2007).	The Greenwater River provides foraging, migration, and overwintering habitat, but recent telemetry efforts indicate it is unlikely to continue to provide spawning habitat for fluvial and anadromous life history forms as previously proposed. However, it is believed to provide essential FMO habitat for the migratory life history form utilizing the White River system. It is also essential for maintaining the opportunity for migratory bull trout (either the remnant population or recolonizers) to use potential tributary spawning and rearing habitats in the Greenwater system and migrate to FMO habitats in the mainstem White River and Puget Sound.	1216586 471586

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puyallup River	Hazzard Creek	WA	Connected to occupied stream (West Fork White River). Stream is within the home watershed of a known local population (West Fork White River) of bull trout. Stream has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1216797 470777
Puget Sound—Puyallup River	Unnamed trib. (#0194)	WA	Connected to occupied stream (West Fork White River). Stream is within the home watershed of a known local population (West Fork White River) of bull trout. Stream has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1216814 470716
Puget Sound—Puyallup River	Cripple Creek	WA	Juvenile bull trout observed during USFS survey conducted in August 1981(USFS, in litt. 1982). Cold water temperatures were noted, 8 C at top of reach and 12 C at the mouth.	Cripple Creek provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1216920 470484
Puget Sound—Puyallup River	Wrong Creek	WA	Connected to occupied stream (West Fork White River). Stream is within the home watershed of a known local population (West Fork White River) of bull trout. Stream has not been extensively surveyed for bull trout, but in close proximity to known rearing distribution. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1216930 470494
Puget Sound—Puyallup River	Viola Creek	WA	Connected to occupied stream (West Fork White River). Stream is within the home watershed of a known local population (West Fork White River) of bull trout. Stream has not been extensively surveyed for bull trout, but in close proximity to known rearing distribution. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1216933 470520
Puget Sound—Puyallup River	Lodi Creek	WA	Juvenile bull trout observed during surveys in 2000 (MRNP, in litt. 2001).	Lodi Creek provides essential habitat used for spawning and rearing in the West Fork White River local population. It is essential for maintaining distribution, abundance, and productivity.	1217047 469600
Puget Sound—Puyallup River	Unnamed trib. (#0234)	WA	Young of year and juvenile bull trout observed during surveys in 2000 (MRNP, in litt. 2001).	This unnamed tributary provides essential habitat used for spawning and rearing in the West Fork White River local population. It is essential for maintaining distribution, abundance, and productivity.	1217124 469651
Puget Sound—Puyallup River	Ipsut Creek	WA	Part of current distribution (MRNP 2009). Bull trout were noted to be present in this stream in 1966 (Drake 1995). Small subadult sized bull trout observed in 1995 (Samora, in litt. 1998).	Isput Creek provides essential habitat used for spawning and rearing in the Carbon River local population. It is essential for maintaining distribution, abundance, and productivity.	1218321 469795

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puyallup River	Clearwater River	WA	Part of current distribution (WDFW 2002). An adult bull trout observed in fall of 1998 (Nelson, in litt. 2003). It is a productive salmon stream important for seasonal foraging by migratory bull trout. However, no bull trout spawners were tracked moving into this system during recent radio telemetry surveys conducted in the White River (Ladley et al. 2007).	This segment of the Clearwater River provides foraging, migration, and overwintering habitat, but recent telemetry efforts indicate it is unlikely to provide spawning habitat for fluvial and anadromous life history forms as previously proposed. However, it is believed to provide essential FMO habitat for the migratory life history form utilizing the White River system.	1218328 471463
Puget Sound—Puyallup River	Chenuis Creek	WA	Part of current distribution (MRNP 2009). Bull trout were noted to be present in this stream in 1966 (Drake 1995). Juvenile and subadult bull trout observed in 1995 (Samora, in litt. 1998).	Chenuis Creek provides essential habitat used for spawning and rearing in the Carbon River local population. It is essential for maintaining distribution, abundance, and productivity.	1218423 469924
Puget Sound—Puyallup River	Ranger Creek	WA	Part of current distribution (MRNP 2009). Bull trout were noted to be present in this stream in 1966 (Drake 1995). Juvenile and subadult bull trout observed in 1995 (Samora, in litt. 1998), and redds observed in 2000 (Marks et al. 2002).	Ranger Creek provides essential habitat used for spawning and rearing in the Carbon River local population. It is essential for maintaining distribution, abundance, and productivity.	1218529 469967
Puget Sound—Puyallup River	South Mowich River	WA	Bull trout use confirmed during survey efforts conducted by National Park Service (MRNP 2009; Wright, pers. comm. 2009).	This segment of the South Mowich River provides essential spawning and rearing, habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1218940 469164
Puget Sound—Puyallup River	Tolmie Creek	WA	Connected to occupied stream (Carbon River). Stream is within the home watershed of a known local population (Carbon River) of bull trout, near identified mainstem spawning distribution (WDFW 2002). Stream has not been extensively surveyed for bull trout, but in close proximity to known spawning distribution. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219426 469905
Puget Sound—Puyallup River	North Puyallup River	WA	Connected to occupied stream (South Puyallup River). Stream is within the home watershed of a known local population (Upper Puyallup and Mowich Rivers) of bull trout. Habitat is accessible but has not been surveyed by the NPS (Wright, in litt. 2009).	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219494 468640
Puget Sound—Puyallup River	South Puyallup River	WA	Part of current distribution (MRNP 2009). Large juvenile or subadult observed in 1993 (Samora, in litt. 1998).	South Puyallup River provides essential habitat used for spawning and rearing in the Upper Puyallup and Mowich Rivers' local population. It is essential for maintaining distribution, abundance, and productivity.	1219494 468650

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puyallup River	Poch Creek	WA	Connected to occupied stream (Carbon River). Stream is within the home watershed of a known local population (Carbon River) of bull trout, and near identified mainstem spawning distribution (WDFW 2002). Stream has not been extensively surveyed for bull trout. It is a productive salmon stream important for at least seasonal foraging by migratory bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219578 469940
Puget Sound—Puyallup River	Swift Creek	WA	Part of current distribution (WDFW 2002). Stream is within the home watershed of a known local population of bull trout. Stream has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219625 468704
Puget Sound—Puyallup River	Deer Creek	WA	Part of current distribution (WDFW 2002). Stream is within the home watershed of a known local population of bull trout. Stream has not been extensively surveyed for bull trout.	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219729 468734
Puget Sound—Puyallup River	Mowich River	WA	Currently occupied by migratory bull trout (WDFW 2002). Subadult bull trout observed near the confluence of the North and South Mowich Rivers in 2000 (MRNP, in litt. 2001). Populations of bull trout have been fragmented above and below the confluence of the Mowich and Puyallup Rivers for nearly 100 years by Electron Diversion Dam. Anadromous passage was restored in October 2000.	This segment of the Mowich River provides essential rearing, foraging, migration, and overwintering habitat, and potentially spawning for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1220296 469007
Puget Sound—Puyallup River	Niesson Creek	WA	Productive salmon stream and likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs. This is one of only a few significant FMO tributaries to the mainstem Puyallup River available to bull trout.	1220449 469126

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puyallup River	Kapowsin Creek	WA	Productive salmon stream and likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs. This is one of only a few significant FMO tributaries to the mainstem Puyallup River available to bull trout.	1222034 470316
Puget Sound—Puyallup River	Carbon River	WA	Currently occupied by migratory bull trout (WDFW 2002). Several individuals caught by anglers in early October 2003 near Orting (Reynolds, pers comm. 2003).	This segment of the Carbon River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1222316 471303.1
Puget Sound—Puyallup River	White River	WA	Currently occupied by migratory bull trout (WDFW 2002). An average of 25 migratory individuals are annually passed upstream over Buckley Diversion, 41 bull trout were passed in 2002 (USACOE, in litt. 2003) and 49 and 45 in 2003 and 2004, respectively (USACOE, in litt. 2005).	This segment of the White River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1222573 471997.1
Puget Sound—Puyallup River	White River	WA	Part of current distribution (WDFW 2002; MRNP 2009). Juvenile and subadult bull trout captured between river mile 43 and 53 during electrofishing surveys in 1993 (WDFW 1998). Subadults and adults have been targeted by anglers in this reach (Herzog 1993).	This segment of the White River provides essential rearing, foraging, migration, and overwintering habitat, and potentially spawning habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and maintaining abundance and productivity.	1222573 471997.3
Puget Sound—Puyallup River	Puyallup River	WA	Currently occupied by migratory bull trout (WDFW 2002).	This segment of the Puyallup River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1224252 472685.1

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puyallup River	Puyallup River	WA	Part of current distribution (WDFW 2002). Spawning and juvenile rearing use in extreme lower reaches.	This segment of the Puyallup River provides essential rearing, foraging, migration, and overwintering habitat, and potentially spawning for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1224252 472685.2
Puget Sound—Puyallup River	St. Andrews Creek	WA	Part of current distribution (WDFW 2002). Advanced juvenile or subadult observed in 1993 near mouth (Samora, in litt. 1998). Bull trout use confirmed during survey efforts conducted by National Park Service (Wright, pers. comm. 2009).	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1219201 468375
Puget Sound—Puyallup River	North Mowich River	WA	Bull trout use confirmed during survey efforts conducted by National Park Service (MRNP 2009; Wright, pers. comm. 2009).	The draft recovery chapter identifies these accessible tributary streams within local populations as essential to maintaining the current distribution, abundance, and productivity of bull trout within the core area.	1218940 469154
Puget Sound—Puyallup River	June Creek	WA	A pair of spawning adults (15-17 inches long) was observed in October of 2005 (Rudolph, in litt. 2005). Fish access was recently restored above a blocking culvert (Wright, pers. comm. 2009), and bull trout use was confirmed above this point during recent survey efforts conducted by National Park Service (MRNP 2009)	June Creek provides essential habitat used for spawning and rearing in the Carbon River local population. It is essential for maintaining distribution, abundance, and productivity.	1219119 469968
Puget Sound—Puyallup River	Falls Creek	WA	Bull trout use confirmed during survey efforts conducted by National Park Service (MRNP 2009).	Falls Creek provides essential habitat used for spawning and rearing in the Carbon River local population. It is essential for maintaining distribution, abundance, and productivity.	1218733 469999
Puget Sound—Puyallup River	Unnamed trib. upstream Chenius Ck	WA	Bull trout use confirmed during survey efforts conducted by National Park Service (MRNP 2009).	This unnamed tributary provides essential habitat used for spawning and rearing in the Carbon River local population. It is essential for maintaining distribution, abundance, and productivity.	1218423 469925
Puget Sound—Puyallup River	Unnamed trib. (#0565)	WA	Bull trout use confirmed during survey efforts conducted by National Park Service (MRNP 2009).	This unnamed tributary provides essential habitat used for spawning and rearing in the Carbon River local population. It is essential for maintaining distribution, abundance, and productivity.	1217918 469614
Puget Sound—Puyallup River	Unnamed trib. (#0217)	WA	Young of year and juvenile bull trout observed during surveys in 2000 (MRNP, in litt. 2001).	This unnamed tributary provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1217037 469929

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puyallup River	Unnamed trib. (#0226)	WA	Young of year and juvenile bull trout observed during surveys in 2000 (MRNP, in litt. 2001).	This unnamed tributary provides essential habitat used for spawning and rearing in the West Fork White River local population. It is essential for maintaining distribution, abundance, and productivity.	1217103 469619
Puget Sound—Puyallup River	Unnamed trib. upstream of (#0214)	WA	Bull trout use confirmed during survey efforts conducted by National Park Service (MRNP 2009).	This unnamed tributary provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1216996 469968
Puget Sound—Puyallup River	Unnamed trib. (#0336)	WA	Bull trout use confirmed during survey efforts conducted by National Park Service (MRNP 2009).	This unnamed tributary provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1215405 469765
Puget Sound—Puyallup River	Sunrise Creek	WA	Bull trout use confirmed during survey efforts conducted by National Park Service (MRNP 2009).	Sunrise Creek provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1215386 469715
Puget Sound—Puyallup River	Crystal Creek	WA	Part of current distribution (MRNP 2009). Juvenile bull trout observed in 2000 (MRNP, in litt. 2001).	Crystal Creek provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1215365 469286
Puget Sound—Puyallup River	Unnamed trib. (LB1) upstream of Crystal Ck	WA	Bull trout use confirmed during survey efforts conducted by National Park Service (MRNP 2009).	This unnamed tributary provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1215438 469252
Puget Sound—Puyallup River	Unnamed trib. (LB2) upstream of Crystal Ck	WA	Bull trout use confirmed during survey efforts conducted by National Park Service (MRNP 2009).	This unnamed tributary provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1215432 469232
Puget Sound—Puyallup River	Unnamed trib. (RB) upstream of Crystal Creek	WA	Bull trout use confirmed during survey efforts conducted by National Park Service (MRNP 2009).	This unnamed tributary provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1215418 469196
Puget Sound—Puyallup River	Klickitat Creek	WA	One of the current bull trout spawning index areas in the White River local population surveyed by the Puyallup Tribe (Marks, in litt. 2009). A peak count of 13 adults and 14 redds were observed in 2008. Juveniles also observed in pools and lateral habitats during surveys (MRNP, in litt. 2001; Marks et al. 2002).	Klickitat Creek provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1215484 469083

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puyallup River	Unnamed trib. (#0364)	WA	Juvenile bull trout observed in 2000 (MRNP, in litt. 2001). One of the current bull trout spawning index areas in the White River local population surveyed by the Puyallup Tribe (Marks, in litt. 2009).	This unnamed tributary provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1215593 469046
Puget Sound—Puyallup River	Wright Creek	WA	One of the current bull trout spawning index areas in the White River local population surveyed by Puyallup Tribe (Marks, in litt. 2009).	This tributary to Fryingpan Creek provides essential habitat used for spawning and rearing in the White River local population. It is essential for maintaining distribution, abundance, and productivity.	1216140 468781
Puget Sound—Puyallup River	Carbon River	WA			1222316 471303.1
Puget Sound—Puyallup River	White River	WA	Part of current distribution (WDFW 2002).	This segment of the White River provides essential foraging, migration, and overwintering habitat, and potentially rearing habitat for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1222573 471997.2
Puget Sound—Puyallup River	Van Horn Creek	WA	Bull trout use confirmed during survey efforts conducted by National Park Service (MRNP 2009).	Van Horn Creek provides essential habitat used for spawning and rearing in the West Fork White River local population. It is essential for maintaining distribution, abundance, and productivity.	1217167 469774
Puget Sound—Puyallup River	South Prairie Creek	WA	Very productive salmon stream and likely important for seasonal foraging by migratory bull trout. Currently accessible to anadromous and fluvial bull trout.	The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for bull trout. This stream is also included as a shoreline under the Washington State's Shoreline Management Act, since its mean annual flow is greater than 20 cfs.	1221544 470981
Puget Sound—Puyallup River	Carbon River	WA	Part of current SR distribution (Samora, in litt. 1997; MRNP 2009). Adult and subadult bull trout observed during night snorkel surveys (Craig, in litt. 2000).	This segment of the Carbon River provides essential rearing, foraging, migration, and overwintering habitat, and potentially spawning for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1222316 471303.2

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puyallup River	Carbon River	WA	Part of current SR distribution (Samora, in litt. 1997; MRNP 2009). Adult and subadult bull trout observed during night snorkel surveys (Craig, in litt. 2000).	This segment of the Carbon River provides essential rearing, foraging, migration, and overwintering habitat, and potentially spawning for fluvial and anadromous life history forms. It is essential for directly providing and maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1222316 471303.2

2.13. Puget Sound Marine Critical Habitat Subunit

The Puget Sound Marine CHSU is essential to bull trout conservation and for supporting the expression of the amphidromous life history form in the Puget Sound region. It contains essential FMO habitat required for the expression of the amphidromous life history form within the Puget Sound CHU (see Appendix 1for more detailed information).

The estuarine and marine waters of Puget Sound provide foraging and migration habitat for amphidromous bull trout outside of freshwater core areas. Amphidromous bull trout use nearshore habitat along the eastern shore of Puget Sound from the U.S.–Canadian border south to the Nisqually River delta. Bull trout have also been documented using the nearshore habitat of islands along this eastern shore, especially in the northern part of the sound. The extent of bull trout use along the western Puget Sound shoreline is not well known, but available information suggests it is used to a much lesser degree than the eastern shore. The current distribution data for bull trout most likely under represent the amount of occupied marine nearshore habitat due to the depressed status of some amphidromous bull trout populations; the seasonal and temporal variability in their migratory behavior; and perhaps most importantly, the difficulty of sampling for subadult and adult life stages in large estuarine and marine environments. The Puget Sound Marine CHSU includes the estuarine and nearshore areas along Puget Sound shorelines. A total of approximately 911 km (566 mi) of marine and estuarine shoreline is designated as critical habitat. The following water bodies are included in this CHSU (see Table 23):

(A) The eastern shoreline of Puget Sound (208.2 km (129.4 mi)) from the U.S.–Canadian border to Harbor Park (Fidalgo Island), and from Sares Head (Fidalgo Island) to Nisqually Head at the southern end of the Nisqually River delta—including associated bays and estuaries and Swinomish Channel (10.5 km (6.5 mi))—provide important marine foraging and migration habitat for amphidromous bull trout.

(B) The shorelines of Lummi Island (eastern shoreline from Village Point to Carter Point) (21.6 km (13.4 mi)); Portage Island (12.9 km (8.0 mi)); Guemes Island (eastern shoreline from Southeast Point to Clark Point) (9.8 km (6.1 mi)); Whidbey Island (eastern shoreline from north end of West Beach to Possession Point) (146.6 km (91.1 mi)); Hope Island (4.0 km (2.5 mi)); Goat Island (2.9 km (1.8 mi)); Ika Island (3.7 km (2.3 mi)); Gedney Island (6.8 km (4.2 mi)); and Vashon Island (southeastern shoreline from northeast Summerhurst to Neill Point) (26.2 km (16.3 mi)) all provide marine foraging and migration habitat for amphidromous bull trout. Bull trout have been documented in nearshore areas around Lummi, Whidbey, and Ika Islands. The remaining identified island shorelines are presumed occupied based on their proximity to known occupied areas, documented use along similar shorelines, and forage fish availability.

Table 23. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Puget Sound—Puget Sound Marine CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puget Sound Marine	Eastern Shoreline Puget Sound (North)	WA	See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-01
Puget Sound—Puget Sound Marine	Eastern Shoreline Puget Sound (South)	WA	See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-01
Puget Sound—Puget Sound Marine	Eastern Shorline Lummi Island	WA	See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-02
Puget Sound—Puget Sound Marine	Portage Island	WA	See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-03
Puget Sound—Puget Sound Marine	Eastern Shoreline Whidbey Island	WA	See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-05
Puget Sound—Puget Sound Marine	East Duwamish Waterway	WA	Currently occupied by anadromous bull trout (Shannon, in litt. 2001, 2003). Lower river reach of productive salmon system important for seasonal foraging by anadromous bull trout.	The draft recovery chapter identifies this waterbody used by anadromous bull trout, but currently lying outside of designated core areas, as essential to maintaining the current distribution, abundance, and productivity of bull trout within the recovery unit. The draft recovery chapter explicitly identifies as essential and biologically important accessible habitat occupied by anadromous salmonids which provide an important forage base for anadromous bull trout.	1223430 475891
Puget Sound—Puget Sound Marine	Eastern Shoreline Guemes Island	WA	Shoreline in close proximity to known occupied shorelines and accessible to anadromous bull trout. See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Has not been specifically surveyed for bull trout. Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-04

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puget Sound Marine	Hope Island	WA	Shoreline in close proximity to known occupied shorelines and accessible to anadromous bull trout. See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Has not been specifically surveyed for bull trout. Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-06
Puget Sound—Puget Sound Marine	Goat Island	WA	Shoreline in close proximity to known occupied shorelines and accessible to anadromous bull trout. See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Has not been specifically surveyed for bull trout. Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-07
Puget Sound—Puget Sound Marine	Gedney Island	WA	Shoreline in close proximity to known occupied shorelines and accessible to anadromous bull trout. See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Has not been specifically surveyed for bull trout. Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-08
Puget Sound—Puget Sound Marine	Southeastern Shoreline Vashon Island	WA	Shoreline in close proximity to known occupied shorelines and accessible to anadromous bull trout. See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Has not been specifically surveyed for bull trout. Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-09
Puget Sound—Puget Sound Marine	Ika Island	WA	See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).		M-PS-MR-10
Puget Sound—Puget Sound Marine	Union Slough	WA	Currently occupied by migratory bull trout (WDFW 1998; Goetz, in litt. 2003).	This segment of the Snohomish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1221901480344

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Puget Sound—Puget Sound Marine	Steamboat Slough	WA	Currently occupied by migratory bull trout (WDFW 1998; Goetz, in litt. 2003).	This segment of the Snohomish River provides essential foraging, migration, and overwintering habitat for fluvial and anadromous life history forms. It is essential for directly maintaining connectivity between SR habitats and freshwater and marine FMO habitat and indirectly maintaining abundance and productivity.	1221506480015
Puget Sound—Puget Sound Marine	Eastern Shoreline Whidbey Island	WA	See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-05
Puget Sound—Puget Sound Marine	Eastern Shoreline Puget Sound (South)	WA	See point distribution map of marine observations in Puget Sound (Service, in litt. 2005a). Includes important forage fish spawning areas (WDFW 2000), which bull trout are known to target (WDFW et al. 1997).	See "Puget Sound CHU" justification text, above	M-PS-MR-01